JAN. 20 1961

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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INSIDE *Slant*

DUTIES CLEARLY STATED

"It is the commission's job to regulate the industry, not to serve it."

This statement by Johnny Mitchell, Houston, president of Jade Oil Co., in a letter to stockholders, clearly states the duties of the Texas Railroad Commission.

Earlier in the letter, he had said:

"We must remember that the Texas Railroad Commission is not an industrial commission, but is a public regulatory body, designed not to serve the industry, but to serve the public. . .

"It is the people who are beginning to get stirred up about conservation because, after all, we're talking about the conservation of natural resources.

"If, however, the independents meet and agree they want changes in our statutes (relative to well spacing, unitization, and economy), then it follows that the commission will give the fullest consideration to the requested changes consistent with the needs of the people, whom they serve. . .

"The fault of conservation does not lie so much with the commission as with independent oil men who have not bothered to study their own problems."

LeRoy Menzing
EDITOR

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Views That Make News

Dear Sir:

Why a responsible publication like PETROLEUM WEEK would deign to publish such unmitigated bunk as "Oil May Be Found In Any Type Rocks" [PW—Dec.30'60,p26] is beyond comprehension. The geologists from the University of Michigan would surely hasten to disassociate themselves from such a preposterous proposition.

GLENN J. POULTER
Senior geologist
Mobil Oil Co.

• Petroleum Weeks feels it should present all new theories from responsible sources. The Bulletin of the American Assn. of Petroleum Geologists for October, 1960, carried a report on a theory attributed to University of Michigan geologists, which furnished the basis for a story in the Nov. 4 Petroleum Week. The Zenor article, to which Mr. Poulter refers, is a continuation of that theory.

Dear Sir:

I have long been a subscriber to PETROLEUM WEEK, and feel obliged to comment on the article "Oil May Be Found in Any Type Rocks," which outlined Professor of Geophysics H. M. Zenor's theory.

Dr. Zenor is a fine gentleman, and a fine theoretical physicist, very competent in his field. However, we also have a staff of nine geologists at Missouri School of Mines & Metallurgy, each of whom is experienced and competent in his field of specialization. . . It would seem appropriate that PETROLEUM WEEK should make public the fact that Dr. Zenor's theory is not endorsed by teachers of geology at Missouri School of Mines.

Personally, I have had considerable experience in exploring for and developing oil deposits in various parts of the Western Hemisphere. Since 1948, I have taught the courses in petroleum geology at the Missouri School of Mines. In these courses, I emphasize the futility of expecting to find commercial accumulations of oil or gas (1) in areas where the youngest sedimentary rocks are pre-Cambrian in age, (2) in areas where the surface rocks, regardless of their age, are highly metamorphosed, and (3) in areas occupied at the surface by instrusive-type igneous rocks, such as granite.

I also emphasize that the probability of finding commercial oil deposits in a poorly explored area is much enhanced by the presence of a large volume of sediments, and that the amount of oil present in an undeveloped area tends to be proportional to the volume of sediments. The obvious conclusion is: No sediments, no oil! This, of course, is in sharp contrast to Zenor's theory.

Like many of my colleagues who work in the oil industry, and who teach young people who will work in the oil industry, I have a very high regard for the oil business in all its legitimate manifestations. However, we also realize that an article such as "Oil May Be Found in Any Type of Rocks," though written with the best of intent, may be used by certain classes of promoters to influence unwary or poorly informed investors to risk their money in very speculative enterprises. This possibility is enhanced when the article may be construed to have the endorsement of geology staff members at an institution of higher learning such as Missouri School of Mines.

I am certain that I have endorsement of the geology staff at this institution in my opinion that nothing could be more speculative and less promising of fruitful return for the investor than to back an oil test in pre-Cambrian rocks, where there is no sedimentary cover to serve as source beds.

RAY E. MORGAN
Associate professor of economic geology
Missouri School of Mines & Metallurgy
University of Missouri

Dear Sir:

Regarding H. M. Zenor's theory: Has Mr. Zenor considered a course in basic physical and historical geology?

GEORGE H. DAVIS
Pittsburgh, Pa.

Dear Sir:

Your Inside Slant "Dear Santa: More Unity" [PW—Dec.23'60,p3] is another excellent editorial.

C. H. LYONS, SR.
Former president
Independent Producers Assn. of America

PETROLEUM WEEK will publish reader comments each week. Address letters to LeRoy Menzing, Editor, PETROLEUM WEEK, 330 W. 42nd St., New York 36, N. Y.

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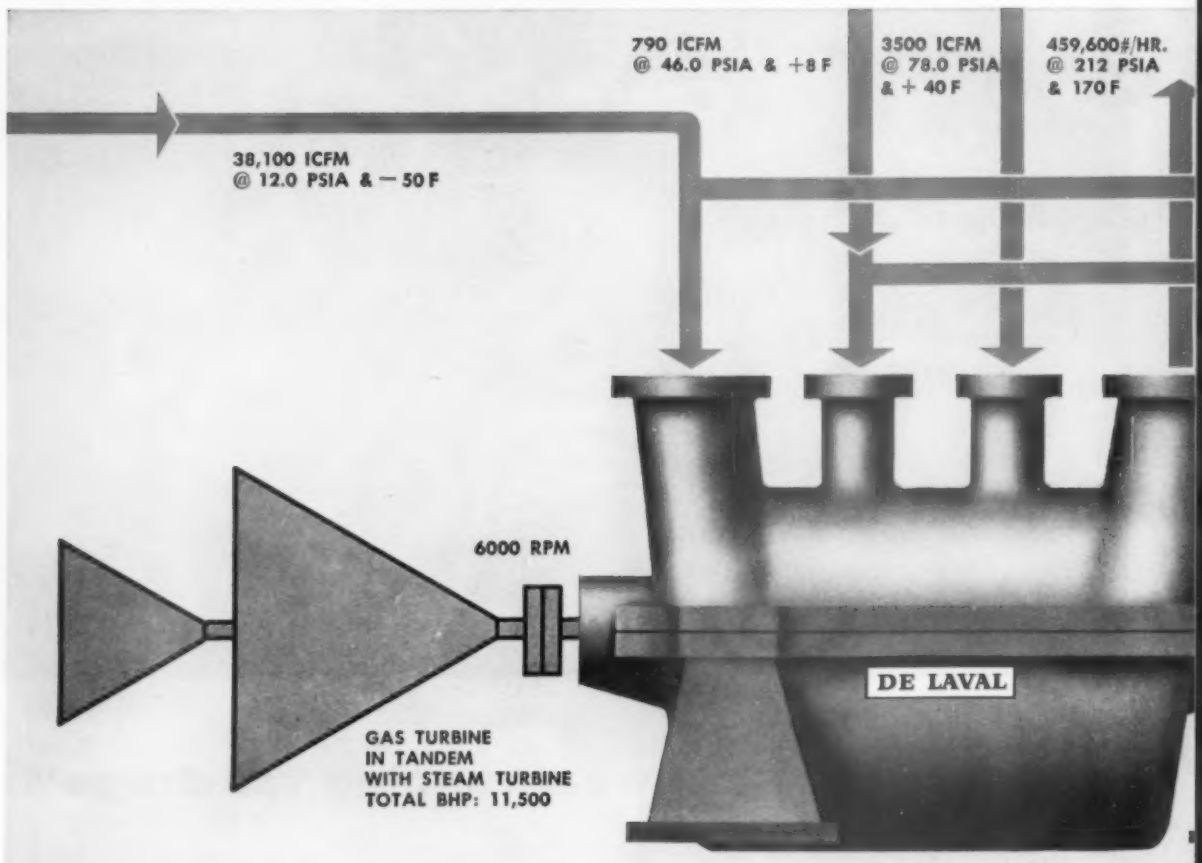

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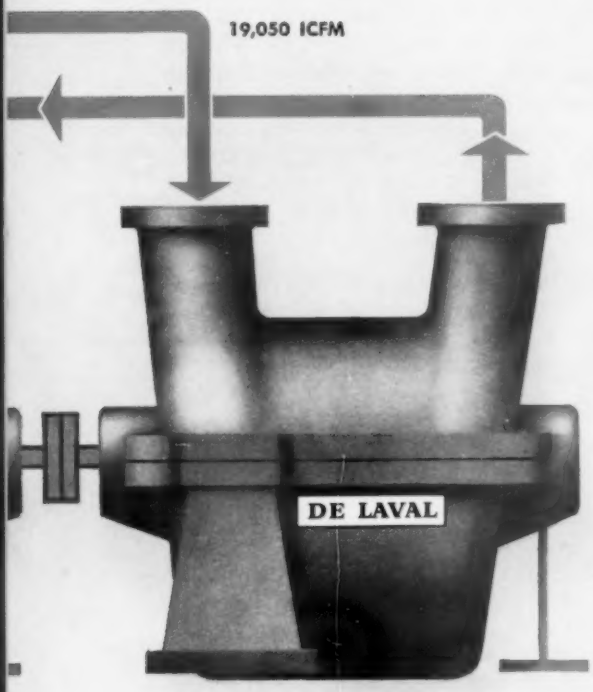

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Here is a good example of De Laval design flexibility. In this centrifugal compressor installation the customer wanted to use gas turbine drive because it would provide the most economical use of process fuel. But no single flow compressor design could operate at gas turbine speeds. De Laval creative engineering solved this problem by splitting the flow into two units and several stages as illustrated on these pages.

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Good Wells Make Good News

A Report on Some Unusually Successful Recent Frac Jobs

JANUARY 20, 1961

Here are four recent examples showing how Dowell fracturing services have helped operators increase oil and gas production and profits.

- **Butler County, Kansas** (Waterflood Producer) Production from this Kansas City lime well had declined to 4 bopd and 30 bwpd. Dowell engineered a treatment using the Frac Guide*. 5000 gallons of acid-oil emulsion carried 10,000 pounds of 20-40 mesh sand into the formation at 12 bpm. 140 days after treatment, production was 81 bopd and 106 bwpd.

- **Panola County, East Texas** (Old Gas Well) Gas delivery from this well into the 300-psi line had declined to 200 mcfd. The well had been producing from eight perforated intervals between 6068 and 6434 feet in the Travis Peak formation. The total perforated pay was 111 feet -- 70 of which looked good on logs. Dowell engineers fractured the well using 100,000 gallons of gelled water and 70,000 pounds of 20-40 mesh sand -- 1000 pounds sand per foot of good pay. As each interval was fractured, perforation ball sealers were injected to divert fracturing fluids to another zone. Injection rate averaged 24 bpm at pressures ranging from 2500 to 4000 psi. After treatment, delivery to line was 1200 mcfd, a net increase of 1000 mcfd. Payout was fast -- approximately 1½ months.

- **Jones County, Northwest Texas** (New Oil Well) This tubingless completion was made into the Canyon sand through five sets of perforations between 3864 and 4039 feet. Initial test was almost two boph but operator wanted to stimulate so top allowable would be assured. Dowell engineered a treatment using the Frac Guide. 40,000 gallons lease oil with FLA* (Fluid Loss Additive) and 80,000 pounds sand were injected down 2½-inch casing at 12 bpm and 3400 psi. After treatment, well potentialed 1560 bopd -- a 30-fold increase.

- **San Juan County, New Mexico** (New Gas Well) This development well was drilled into the Dakota sand between 6698 and 6774 feet. Permeability was so poorly developed, compared to other wells in the area, that abandonment was considered. However, operator decided to complete the well, using Abrasijet* -- abrasive jetting service -- and fracturing. With Abrasijet, Dowell cut five notches into formation at 6698, 6704, 6756, 6768 and 6774 feet. About 20,000 pounds of sand was used. Dowell then fractured using water to carry 30,000 pounds of sand at about 35 bpm. Well potentialed 2500 mcfd -- similar to other wells in the field. Operator believes $4500 treatment made an economic producer out of what would otherwise have been a dry hole.

Your Dowell engineer has many services and products to help you improve net profits on your operations. For service or more information, dial Dowell. Dowell services and products are offered from more than 150 offices and stations in the United States, Canada, Venezuela, Argentina, Germany, France and the Sahara area. Dowell, Tulsa 1, Oklahoma.

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60-Second Summary / WHAT'S HAPPENING IN OIL

AT-A-GLANCE Copyright PETROLEUM WEEK

January 20, 1961

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Gasoline taxes and the highway construction fund are going to be major issues in Congress this year. President Eisenhower's farewell budget included recommendations for increases in taxes on gasoline. President Kennedy will have his say later. . . . p. 14

•

A wave research program is pointing out ways to build offshore platforms cheaper and better. So far, it has showed where fewer—but usually larger—pilings can be used to support the offshore platforms. . . . p. 22

•

Libya's oil chief is opposed to the proration goals of the Organization of Petroleum Exporting Countries. He doesn't believe in price controls and intends to reaffirm the 50-50 profit sharing principle for Libyan concessions. . . . p. 18

•

Oklahoma is adding an acreage factor to its allocation formula for the first time. A revised regulatory code containing many changes is expected to go into effect Mar. 1, climaxing two years of study. . . . p. 17

•

Natural gas from the Sahara is getting closer to Europe. French operators of the Hassi R'Mel field are lining up customers and studying pipeline routes under the Mediterranean. . . . p. 44

•

A new manual published by the government could be of help to refiners in air pollution emissions from a refinery. It's based on studies of the Los Angeles smog problem. . . . p. 42

•

A better understanding of reef structures may help in the search for oil. A research project off the Mexican coast could add significantly to the industry's knowledge of reefs. . . . p. 28

•

The need for more emphasis on long-range planning was the chief reason for Mobil Oil Co.'s reshuffling of its top marketing staff. It was felt that present executives were too overburdened. . . . p. 54

•

A Western Canada producer feels that a crude pipeline from Alberta to Montreal is the Canadian industry's only salvation. He says "corporate self interests" of international oil companies are blocking the plan. . . . p. 16

•

Phillips Petroleum Co. expects to open a new export route for eastern Venezuela crude late this year. Heavy crude from Monagas will be delivered to Puerto Rodaz for export via the Orinoco River. . . . p. 46

Up to the Minute

SIGNIFICANT LATE NEWS

January 20, 1961

Influential Democrats are pushing Imports Administrator Lawrence J. O'Connor, Jr., for a Federal Power Commission seat. The five-member commission has one vacancy now, and a second would occur if President Kennedy does not retain Paul Sweeney, a Democrat appointed by Eisenhower last year, but not confirmed by the Senate. O'Connor, who became the imports boss in mid-1960, has long been associated with the producing branch of the industry. He had 20 years' service with Goldston Oil Corp., Houston, rising to vice-president and treasurer before he resigned in 1958 to become a consultant. He was a district vice-president of the Independent Petroleum Assn. of America.

•

One of outgoing President Eisenhower's last official acts was to extend residual fuel import quotas to East Coast terminal operators. The order, effective with the next allocation period on Apr. 1, will permit from 12 to 14 deepwater terminal operators, plus two major companies—Cities Service and Sun Oil—to become resid importers. The new Interior Secretary, Stewart L. Udall, was briefed on the changes. The new rules are expected to stand, at least until the new Administration makes a full evaluation of the import program.

Residual allocations to terminal operators are expected to be set at one-third or one-fourth of terminal "inputs" in a recent period. Historical importers will have to make room for the newcomers, but a floor was set guaranteeing the 32 established importers 85% of their 1957 resid imports.

•

U.S. refinery runs last week rose to 8,342,000 b/d, up 175,000 b/d from the previous week, and just 54,000 b/d under the peak set a year earlier. The yield of distillate moved up slightly to 24.9% of throughput.

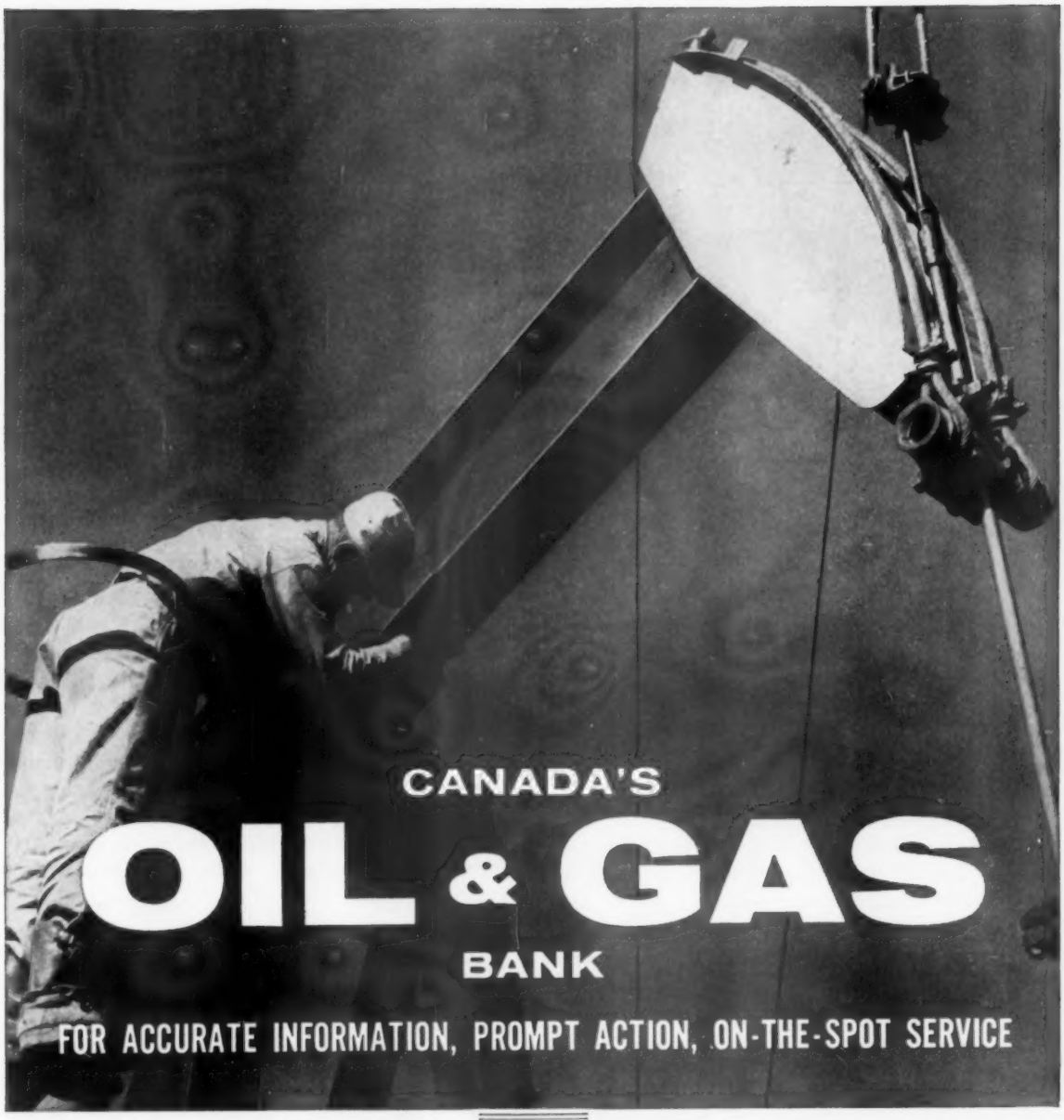
•

Sinclair Oil Corp., one of the first major companies to report 1960 earnings, had a 16% increase in net income. P. C. Spencer, president, estimated profits at $52.4-million for the year.

•

The petroleum industry this week offered—with reservations—to cooperate with the new Administration or Congress in an energy study. The offers came from API President Frank M. Porter and from the executive committee of the Independent Petroleum Assn. of America.

Industry leaders made it clear, though, that they are flatly opposed to a national fuels policy if it means end-use controls. IPAA President Alvin C. Hope said the group's position of support does not reflect retreat "by any stretch of the imagination" from its opposition to end-use controls. Porter wrote President Kennedy that "certain recent proposals urging that such a study be designed to create a so-called new national fuels policy are subject to grave question, and the source of deep concern to many segments of the industrial community and the public."



With over 300 branches throughout Canada's Western provinces, the Royal Bank is in a unique position to provide complete, on-the-spot banking service to those entering the oil and gas industry as well as to those already established in it.

In addition, the Royal maintains a special Oil and Gas Department, staffed by experienced "oil bankers," which is exceptionally

well organized to supply current information and helpful guidance. This department issues Oil and Gas bulletins containing current information and statistics that are basic to the Canadian industry. For an up-to-date list of bulletins, write to our Dallas representative, Mr. H. E. McClenaghan, Room 1523, 300 North Ervay Street, Dallas, Texas; or to The Royal Bank of Canada, Oil and Gas Dept., 409 Eighth Ave., West, Calgary, Alberta.

We do not provide information on oil securities

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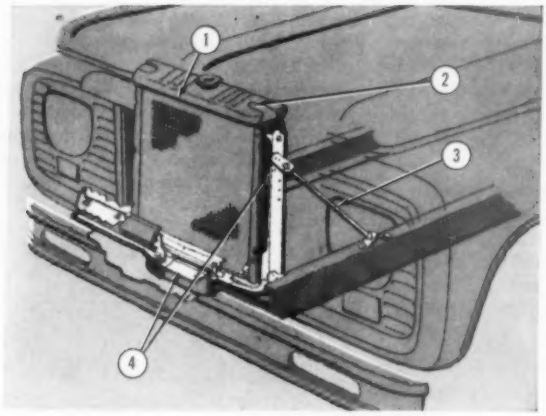
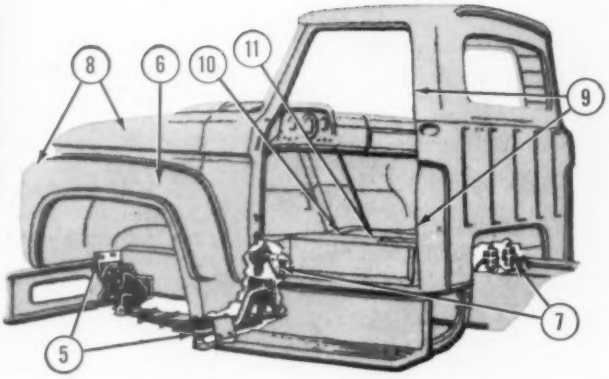
The electrical wiring system has been improved for greater reliability. Chassis wiring is fastened within the protection of the frame web, away from mud, ice and snow. Ford Truck frames have been engineered to make the mounting of bodies and special equipment easier. And a new 212-inch wheelbase model is available to accommodate extra-long bodies.

Save with Ford Heavy Duty Tandems for exceptional durability, payloads and low operating expenses. Ford T-700, T-750 and T-800 Tandems with HD V-8 engines have rugged double-channel frames that are built to take tortuous off-road treatment. And they provide a wider range of chassis options so you can choose the right power train and load-carrying components for any job. Eaton and Timken rear axles are now available in bogie assemblies with 22,000-, 28,000-, 30,000- and 34,000-lb. capacities. And lightweight aluminum walking beams, wheels and gas tanks are available to keep chassis weights low . . . payloads high.

Ask your Ford Dealer about Ford's full tandem line . . . including Super Duties with 38,000-lb. bogies for up to 51,000-lb. GVW!





(1) **Save with Ford's exclusive "lock-seam" radiator construction** that doubles the solder area at key seams for greatly increased strength and longer radiator life.

(2) **Save with heavier-gauge metal on radiator tank and header.** Upper and lower tanks and header have thicker walls to resist vibration, jolts and corrosion for greater reliability.

(3) **Save with independent radiator mountings,** separate from front-end sheet metal. This means that road shocks, vibrations and shakes are not transmitted to the radiator through sheet metal . . . tanks, tubes and connections last longer, require less maintenance.

(4) **Save with "horse collar" mounting** seated on rubber pad for extended radiator life. This new mounting on resilient rubber at the center of frame cross member soaks up any frame flexing . . . cuts wear and tear on entire cooling system.

(5) **Save with independent fender mountings.** Fenders are bolted to a rubber-cushioned transverse bracket at the front and a frame-mounted bracket at the rear. This mounting, independent of both cab and radiator, eliminates stress transfers for greatly increased fender life.

(6) **Save with removable fenders.** The quick and easy removal of only 8 bolts per fender provides faster service accessibility to the engine area, saving valuable maintenance time.

(7) **Save with new 3-point cab mounting system** for greater cab durability. Two outboard front mounts plus a centered "twin" rear mount provide a triangular system that holds the cab stationary while allowing the frame to move independently . . . reducing strain on the cab.

(8) **Save with 42% heavier-gauge sheet metal** in fenders, hood, cab floor pan and toeboard for greater strength, greater durability.

(9) **Save with stronger cab construction.** New full-length door pillar reinforcements provide increased cab rigidity, stamina.

(10) **Save with a more solid foundation.** 42% thicker sheet metal is used in the integral floor pan and toeboard, this with added floor reinforcements gives a stronger base for longer cab life.

(11) **Save with new transmission access panel** to cut transmission service time.

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U.S. Roadbuilding: Where Will Funds Be Raised to Meet Schedule?

The groundwork was laid this week for a major congressional battle on future financing of the massive federal highway construction program. The oil industry has a major stake in its outcome.

Involved is the rate of taxation on gasoline, lubricating oil, diesel fuel, and special fuels—taxes that have a direct impact on the petroleum industry.

And indirectly affecting petroleum are excise taxes on trucks, truck parts, and accessories, and the gross-weight tax on heavy-duty trucks exceeding 26,000 lb.

The coming battle will be drawn along these lines:

- Outgoing President Eisenhower, in his budget message early this week, recommended that Congress increase the present 4¢-a-gal. federal gasoline tax by 0.5¢, to be continued through 1972. He adamantly opposed the scheduled reduction of the tax to 3¢-a-gal. next June 30.
- The Bureau of Public Roads added new heat to the controversy over just how the highway construction bill should be paid. The bureau said nonuser taxes should provide 8% of the total highway building costs, compared with 2% now. (A user tax is levied directly upon vehicles and fuels; a nonuser tax upon indirect highway benefits, such as improved freight deliveries, faster commuting time to employment, and increased land values, among other things.)
- The bureau also said there are clear indications that heavy-duty trucks, particularly truck-trailer combinations, should be paying "considerably more" of highway costs than they now pay.

User revenues flowing into the Highway Trust Fund presently finance nearly all federal road building, including the 41,000-mi. Interstate System that is being built over a 15-year period.

The fund receives all federal taxes on gasoline, diesel fuel, lube oil, tires, tubes, and tread rubber; half of the excise taxes on sales of cars, trucks, trailers, and buses; and all of the federal tax on vehicles heavier than 26,000 lb. The latter is levied at $1.50 per 1,000 lb. gross weight.

In addition, certain revenues not directly connected with highway use go into the fund. These include revenues from taxes levied on aviation, marine, and industrial fuels and tires, and excise taxes on military vehicles for off-highway use.

These revenues offset certain costs not assignable to direct highway users—special highway designs to meet military requirements, special bridge clearances for navigation on inland waters, and the removal of public utility lines from highway rights of way.

President Eisenhower's final budget message proposed several changes in the Highway Trust Fund that have brought outcries from the petroleum industry and highway users.

He recommended taking revenue from the 2¢-per-gal. aviation fuel tax out of the fund and putting it back into the general treasury. He said this revenue is needed to help defray the cost of operating the federal airways system. He also suggested that the aviation fuels tax should be boosted to 4.5¢ a gal. and extended to cover jet fuel, which is not taxed.

In addition, he said that some $38-million in annual charges for financing highways on government-owned lands ought to be charged against the Highway Trust Fund.

The loss of revenues to the fund would be made up by increasing the tax on motor gasoline to 4.5¢ a gal., he said. That rate of tax, he added, would provide enough money to complete the Interstate System in 1972.

Industry spokesmen say that extending the 4¢ tax beyond the June 30 expiration date, and removing some of the income from the highway fund, would be a double blow to the public.

The Bureau of Public Roads told Congress last week that completing the Interstate System would cost $41-billion, of which $37-billion would be

Significant Sidelights

■ **The 0.25¢-a-gal. advance in spot distillate prices on the Gulf Coast last weekend—the second such increase in January—narrows the price gap between No. 2 heating oil and gasoline to the closest it has been since the spring of 1959.**

The low Gulf posting for No. 2 oil is now 9¢ a gal., 2.5¢ below the posting for 93-octane gasoline at the refinery gate. Some cargo buyers insist, though, that the gasoline spot price can be discounted to hold the "spread" to 2.125¢.

The narrower the gap between the two prices, the more inclined processors may be to maximize distillate yields at the expense of making gasoline. And some industry observers are urging refiners to boost yields of distillate—rather than increase crude throughput—to meet demand for heating oils without adding gasoline to the already high inventories.

But how much will actually be done to increase distillate yield is questionable. With No. 2 oil posted at only 0.875¢ a gal. below housebrand gasoline in the spring of 1959, distillate yields averaged 25.5% in January and February, and then gradually tapered downward. The current yield of distillate averages 23.5%, approximately the same as in December.

the federal share and $4-billion the amount to be paid for by the states.

Congress faces two major issues in financing the Interstate System: It must decide whether to shift the tax burden to provide an equitable distribution between users and nonusers; and it must come up with an additional $10-billion. The latter requirement is necessary if the program is to be completed on schedule in 1972.

Eisenhower made it clear that he favors keeping the tax burden on highway users and increasing their load to complete the system on time.

Eisenhower had asked for the 4.5¢-a-gal. tax on motor gasoline two years ago, a request Congress refused. The compromise was a 1¢ hike to 4¢, and it provided that the additional penny would expire June 30.

The loss of the revenue from the expiring tax was to be made up then by diverting for three years the remaining one-half of the excise tax on cars and trucks, and five-eighths of the tax revenue on vehicle parts, from the general treasury to the Highway Trust Fund.

Congress will pay more attention to the recommendations of President Kennedy on the gasoline-tax issue and other highway financing problems than to Eisenhower.

During the fall campaign, Kennedy would not commit himself on whether the fourth cent of the gasoline tax should be allowed to expire at mid-year. He said continuation of the tax "might be necessary" to keep up a high level of highway construction.

Kennedy's views on highway financing may be tempered by his desire to use road-building as one method of stimulating the lagging economy.

Two of Kennedy's advisory task forces have recommended a speed-up in highway building.

Kennedy has also gone on record as favoring greater nonuser participation in the financing of the highway program. But he is not committed to any specific percentage.

In its report on allocating highway costs, the Bureau of Public Roads, in recommending more nonuser participation, made no comment as to whether new nonuser taxes should be levied or whether additional revenues from existing nonuser taxes should be diverted from the general treasury.

The bureau also noted that there are definite indications that heavy-duty trucks in general—and truck trailers in particular—ought to pay more toward highway costs.

That finding was based on preliminary information. More complete data won't be available until midsummer, when the results of exhaustive tests to determine the effect that trucks of various sizes have on different types of highways surfaces are analyzed.

Do-It-Yourself Electricity from Gas or Oil?

Northern Illinois Gas Co. engineers are working on an idea that eventually may be the answer to a marketer's prayer—homemade electricity from gas or oil products.

It's years down the road, but it could be a boon to homeowners, and another outlet for petroleum. On paper, too, it sounds far superior to the conventional gasoline-powered generators that some homes use now on a standby basis.

The Aurora (Ill.) firm's idea is based on a newly developed thermoelectric converter which it obtained from Westinghouse Electric Co. for one of its remote pumping stations.

The converter operates by converting the energy from the burning of a chemical fuels (propane, in this case) directly into electricity. And it comes in a variety of wattages and sizes (picture).

Northern Illinois bought a 100-watt thermoelectric unit for use in the cathodic protection of pipelines and for charging batteries of a microwave relay communications system.

This, incidentally, was one of the first industrial applications of thermoelectric power generators.

But Northern Illinois engineers think the converter might be used to provide electric power for their customers' gas burners, using gas diverted from regular supply lines.

That could open the door, they theorize, to a home completely powered by gas—or by oil products, since Westinghouse says any type of fuel could be used in the converter.

Earl Tornquist, research and development director for the utility, says it will take five years of research before an installation could be made, however.

Texas Instruments, Inc., scientists told a Dallas (Tex.) meeting that thermoelectric converters could be used on remote oil wells, particularly those offshore. Waste gas would generate the electricity, they said.

Canadian producer contends:

Montreal Line Is A 'Must'

Canada has a multibillion-dollar stake in the talked about Alberta-to-Montreal crude pipeline, in the opinion of R. A. Brown, Jr., president of Home Oil Co., Ltd., of Calgary.

Construction of the controversial line is essential to the country's economic progress and security, he argued last week.

As one example, he said such a pipeline would trim $200-million a year from Canada's U.S.-dollar trade deficit by 1963, and would be saving more than $400-million a year by 1972.

Even more significant, he said, the line would halt "dumping" of foreign crude and products in Canada, at the expense of its own industry.

Brown said the international oil companies that control the rich Montreal market will never voluntarily abandon foreign crude for their refineries in favor of Canadian crude.

High production profits for the parent companies and the political pressures of foreign governments will see to that, he asserted.

It's more likely, he went on, that as foreign refinery capacity increases and product surpluses mount, the international companies might cut back on their own Canadian operations to make room for imported products, too.

Brown declared that the "corporate self interest" of "billion-dollar international oil companies" is the real reason for the bitter opposition to the pipeline.

"Without the intervention of our government, these corporations, serving only their own interests, will settle the fate of the Canadian oil industry," he said.

"Instead of a thriving, energetic industry, giving employment to thousands of Canadians all across the country, it will be allowed to deteriorate into a mere storage room for oil against the day when it becomes essential to U.S. requirements."

Hitting at criticism that the Alberta-to-Montreal line would cost eastern consumers 5¢ a gal. more for gasoline, Brown contended that this was not based on fact.

He pointed out that the retail prices of gasoline in Toronto (derived primarily from Canadian crude) and in Montreal (primarily imported crude) are identical and have been for a decade.

Acidly, the Home Oil Co. president asserted that, "If the Montreal refiners have received any alleged benefit from cheaper crude, they obviously have never passed it on."

Brown also challenged the validity of arguments that Montreal refineries couldn't use Western Canada's sweet crude, and that laid-down prices in Montreal couldn't be competitive.

Refineries wear out quickly, he said, and progressive remodeling could replace sour-crude facilities with units geared to easier-to-handle sweet crudes.

Brown calculated that a 50¢-per-bbl. transportation charge would be adequate to generate enough earnings to make the pipeline feasible.

On that basis, he said, domestic crude could be laid down in Montreal at $2.80 per bbl., against the going price of $2.90 per bbl. for Venezuelan crude.

Brown's "case for the Montreal pipeline" conjured up a fascinating array of economic developments for Canada. Among other things, he said, it would:

- Create 6,000 jobs directly, and 25,000 indirectly, during the two-year construction period;
- Require 700,000 tons of Canadian steel pipe, and an additional 26,000 tons of steel for tankage.
- Pay $6-million in federal taxes and $3.6-million in property taxes to Canadian provinces and municipalities annually;
- Stir the economy with $3-billion worth of additional oil production over the next decade.

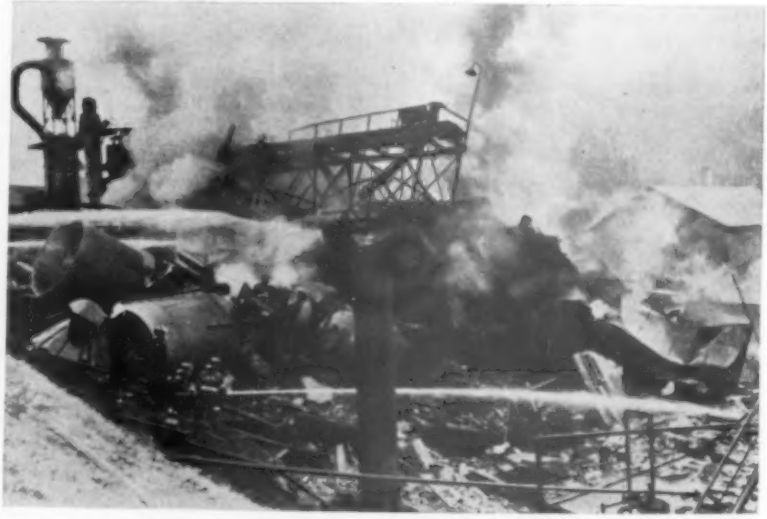
Pontiac Sold to Gulf Foundation

The assets of Pontiac Refining Corp. were quietly transferred to the Gulf Oil Foundation last spring at the time that Gulf Oil Corp. acquired Wilshire Oil Co. from Pontiac, it has been learned.

Edwin Singer, the former president and organizer of Pontiac, disclosed the transaction after a report in PETROLEUM WEEK (PW—Jan.6'61,p15) of the transfer of Pontiac's import quota to the First City National Bank of Houston. The bank is trustee of the foundation, which administers Gulf Oil's charitable contributions.

Singer will continue at Pontiac under a management contract with the bank. Pontiac has a 45,000 b/d refinery at Corpus Christi.

Gulf Oil officials emphasize that the company will make no attempt to "run" Pontiac.



Blast Rips Quaker State Refinery

An explosion ripped the 2,370 b/d Quaker State Oil Refining Corp. refinery, St. Mary's, W. Va., last weekend, causing damage estimated at over $1-million.

Oklahoma Adds Acreage in Allocations

Oklahoma is revising its regulatory code for oil and gas, and is adding an acreage factor to its allocation formula for the first time.

So said Ray Jones, of the Oklahoma Corporation Commission, at a meeting of the Oklahoma Independent Petroleum Assn. this week.

Jones spelled out many of the changes that are coming as a result of the first comprehensive overhauling of the general rules and regulations since 1946.

The revisions have been in the works for the past two years, and represent the joint efforts of the industry and the state regulatory body to remove certain inequities.

The changes are expected to become effective Mar. 1.

This is the way Jones phrased it:

"Rule changes require 30-day notices and hearings. These hearings were held two years ago. Since that time, the rules have been in a state of preparation. They are now ready, and an order probably will be issued this week putting them into effect as of Mar. 1."

The most important—and probably the most controversial—alterations are in Rule 303, affecting the methods of assigning allowables.

Three major-company attorneys, after a review of Jones' comments, agreed that these are the most significant changes in the wind:

- An acreage factor, never used before in Oklahoma, is added to the allocation formula.
- A depth factor, previously used for determining basic allowables for allocated wells only, is added to the determination of unallocated production.
- Waterflood allowables are restricted to developed acreage (containing both input and output wells) directly affected by water injection.
- A definite limitation is placed on salt water exempt production (wells producing at least 75% water) for the first time.

Of these, the most significant change is the stipulation that acreage assigned to allocated wells be used in the determination of each well's allowable.

Previously, average depth alone was the prime consideration in the determination of statewide per-well allowable. Such factors as the reservoir size, productive ability, and effective pay thickness are used in special cases, however.

A cumulative acreage factor is used in a new table giving statewide basic allowables for allocated wells. Each time acreage is doubled, the allowable increases 25%.

Thus, a 5,000-ft. well would have a basic allowable of 40 b/d on 10-acre spacing; 50 b/d on 20-acre spacing, and 63 b/d on 40-acre spacing.

The depth factor is the principal change in the rule for determining allowables for unallocated wells.

Under the old concept, the basic difference between allocated and unallocated production was the fact that allowables for the latter were assigned on a lease rather than a per-well basis.

The new rule adds the depth factor as a consideration, and limits production to that which would be assigned to allocated wells in the same depth bracket having a 10-acre spacing.

How these particular changes will affect statewide market demand proration were spelled out in detail.

Jones said market demand proration will be determined by multiplying the new basic per-well allowable by a percentage factor assigned each month by the state regulatory body.

This means then that basic per-well factors will remain static, once they are assigned, instead of fluctuating month to month, as has been the case.

Production will be limited to market demand by making the percentage relationship coincide with purchaser nominations that are placed before the commission every month.

Salt water exempt wells, under the new rules, will have specific limitations.

Heretofore, salt water wells were permitted to produce at capacity.

The new limitation is that production can be no greater than 200% of the basic 10-acre allowable for allocated wells of similar depths, or production obtained at the lowest water-oil ratio, whichever is the lesser.

Other changes involve secondary recovery operations, pressure maintenance, and waivers affecting drilling close to property lines.

Seek First New Mexico Quadruple

Continental Oil Co. has filed an application for a quadruple completion in New Mexico which, if granted, would be the first in the state.

The New Mexico Oil Conservation Commission will hear the company's plea on Jan. 25 for the quadruple completion of its No. 1-9 Northeast Haynes-Apache, in Rio Arriba County.

Continental proposes to cement three strings of pipe in the hole—two 4½-in. casing strings and a 2⅞-in. tubing string. The latter would be set as casing.

The plan would be to produce from the Greenhorn formation at 6,640 ft. through the smallest-diameter string. Production from the Gallup formation at 5,605-716 ft. and 5,750-818-ft. would be through 2⅜-in. tubing set in one of the 4½-in. casing strings.

Production from the Dakota formation at 4,958 ft. would be through tubing installed in the other casing string.

The fourth completion would be in the annulus between the tubing and the second casing string from the Mesaverde at 4,600 ft.

Total depth is 6,966 ft.

Rep. Harris Favors Fuel Study

Rep. Oren Harris (D., Ark.), a key figure in blocking a fuels study in Congress last year, came out this week in favor of such a study.

Harris says he opposed the study last year because the proposed legislation would have considered end-use controls. The proposals of the Natural Resources Advisory Committee to the new Administration, Harris says, do not contain recommendations for end-use controls.

The Kennedy Administration is being urged to press for legislation establishing a national energy and fuels policy.

The advisory committee, headed by Rep. Frank Smith (D., Miss.), said the government should create "long-range energy resources development objectives based upon forecasts of need and the public interest."

The objective would be the full development of coal supplies, atomic energy, and water power. The group also proposed federal aid to local governments for water-pollution control facilities.

We Won't Join OPEC, Libyan Oil Chief Says

TRIPOLI—North Africa's key new oil country of Libya has "no interest" in any world oil price control or production restriction schemes, has no intention of joining OPEC in the foreseeable future, and intends to reaffirm the 50-50 oil profit sharing principle for Libyan concessions, according to Mohammed Asseifat, chairman of the Libyan Petroleum Commission.

He made these comments this week in a formal statement to PETROLEUM WEEK.

Asseifat, who is 43 years old, was a member of the Constituent Assembly that drew up the Libyan constitution, and has been a member of the four-man Petroleum Commission since its inception in 1955.

He was recently named the commission's permanent chairman.

* * * *

On pricing, Asseifat declared that the oil companies that will have to find the outlets for Libyan oil will be the "best judges" of what they can sell the oil for.

Though he emphasized that the oil companies should inform the Libyan government in advance of any changes they will be making in prices that will affect Libya's revenues, the Commissioner made clear that he did not mean by this that the Government should have "veto power" over such price action.

"After all," he noted, "I'm sure the president of Jersey Standard didn't cut his prices last summer just for the fun of it.

"If a company has informed a producing government why it has to change its selling prices," he observed, "it has done its duty. Even if the government doesn't like it, the company still has the right to go ahead with its action."

* * * *

As for "proration" or other production restriction schemes to uphold world oil prices, Asseifat declared that the "policies of other producing governments in these respects do not apply to Libya."

Libya expects to join the ranks of major oil exporting nations toward the latter part of this year, when its first pipeline, from Esso's large new Zelten field to the Mediterranean, is completed.

"It is to our interest," he declared "to encourage continued maximum oil exploration, and development by private capital—as well as to encourage the oil companies to do everything possible to find outlets for Libyan oil in world markets.".

"What good would it do us to join OPEC [the Organization of Petroleum Exporting Countries]?" he asked.

Libya intends, however, to ask for slightly better terms for the new concessions it plans to offer in areas now being relinquished or surrendered by the companies, Asseifat revealed.

Considerable new acreage will shortly become available from the first batch of oil concessions, which were granted at the end of 1955 and early in 1956. The law provides that one-fourth of each concession must be relinquished at the end of five years, and a total of one-half by the end of eight years.

The government may improve its terms by amending the Petroleum Law, Asseifat said, a move which is now "under consideration."

Such action, however, would require the approval of the Council of Ministers and of Parliament.

"If this proves too complicated," Asseifat said, "the improved terms will have to be negotiated under the existing law." This, he pointed out, has already been done in some of the more recent grants to British Petroleum, Esso Sirte, and the Italians.

* * * *

Asseifat emphasized, however, that Libya had "no intention whatever" of changing the basic 50-50 oil profit sharing principle, which, he said, is "very beneficial to Libya."

He pointed with pride to the wisdom of Libya's oil policy by noting its outstanding success: Although oil exploration only commenced four years ago, eight oil fields have already been discovered, and exploration is continuing at a pace unequaled anywhere else in the world.

The commission chairman explained that he sympathized with the desire of some producing countries to improve on 50-50.

"But this is because some of these countries in the past received only a small proportion of the profits," he noted. "Therefore, they naturally want more than 50% now in order to catch up. But Libya started with 50-50 right from the beginning. And this formula is working out very well in Libya's interests by stimulating exploration at a tremendous pace."

What is it that Libya wants, then, in the way of better terms in the new concessions?

It wants the new contracts to be a "true 50-50," Asseifat replied, "by eliminating the depletion allowance," and certain tax reductions regarding which the present law is unclear.

The Petroleum Chairman went out of his way to stress, however, that Libya "believes in the sanctity

Mohammed Asseifat

of its contracts," and that any amendments that might be made in the law will "definitely not apply retroactively" to the existing concessions.

"We consider the Petroleum Law as a binding contract between the government and the oil companies that signed concessions under that law," he explained.

Asseifat did express the hope that some of the existing concessionaires might be willing to adopt some of the proposed new changes by "mutual agreement." For instance, he explained, some companies might be willing to give up the depletion allowance in their existing concessions in return for new concession grants, or some other similar changes.

* * * *

Asked if he had any other observations to make, Asseifat replied: "Yes. I would like to stress that our relations with the oil companies are very, very good.

"We feel as if the Libyan Government and the oil companies are true partners, with mutual interests and mutual good faith.

"We are like a family, with united interests. We have certain disagreements over minor matters, and certain differences in interpretation. But on basic issues and policies, we are united."

What's New / IN THE INDUSTRY

Phillips Petroleum Co. was barred this week from acquiring additional stock of Union Oil Co. of California, or voting the shares it now holds. A preliminary injunction was issued by Judge Pierson Hall in Federal District Court at Los Angeles. Phillips also was forbidden to seek places for any Phillips' representatives on the Union board, or to issue or seek proxies for voting purposes. Phillips currently owns 1,260,000 shares of Union stock, or roughly 15%. Phillips spokesmen have maintained that the stock was purchased for investment purposes, but Justice Dept. lawyers filed an antitrust suit in December and alleged that interplay would lessen competition. Union subsequently filed a cross-complaint in which it supported the government.

•

Total gasoline demand in February is estimated at 3,830,000 b/d, up 1.2% over last February, by the Bureau of Mines. The bureau also estimated that 7,250,000 b/d of domestic crude will be consumed or exported next month, compared with 7,290,000 b/d anticipated in January. Crude runs to stills in February are estimated at 8.2-million b/d, an increase of 200,000 b/d over December runs.

•

Regional forums to hash out industry problems have been proposed by Texas independent Michel T. Halbouty. This is the second proposal for an industry forum, a similar suggestion having come from Continental Oil Co. president L. F. McCollum. The forums need not be formal, Halbouty said, just friendly gatherings where "independents and majors can get together and tear each other apart in private and come away with some understanding of the other fellow and his trials and tribulations."

•

The "consumer protection" amendments to the Natural Gas Act proposed by state utility commissioners are being pushed toward Congress. Everett C. McKeage, president of the California Public Utilities Commission and head of a committee that drafted the proposed amendments, has urged the California congressional delegation to support the changes. The draft bill was approved by the National Assn. of Railroad & Utility Commissioners (PW—Dec.30'60,p17).

•

Boards of the National Fueloil Council and the Oil Heat Institute of America will vote on merger plans next week. If a majority of directors of both groups approve the proposed constitution and bylaws—as expected—the plan will go for balloting to NFC and OHI members. A two-thirds majority is necessary for ratification.

•

Reports on proved hydrocarbon reserves and availability, refinery maintenance, and chemical needs are being readied for the National Petroleum Council's Feb. 7 meeting. Also up for NPC consideration is the request for action on two new special studies on petroleum transportation capacities and capacity of petrochemical facilities owned or operated by the oil industry.

•

The value of shipments of oilfield equipment in 1960 may have been equal to or better than 1959's, but were not as high as hoped for earlier, the U.S. Dept. of Commerce reports. Shipments in 1959 totaled $954,665,000—18.3% under 1957, the last previous year for which comparable figures are available.

Looking Ahead in Washington

Mc-Graw-Hill
Washington
Bureau
January 20, 1961

Trustbusting will remain stringent despite Robert F. Kennedy's interest in gangbusting. The Attorney General will aim for a record against organized crime, a large task, so his antitrust chief should have a big and fairly free hand in shaping enforcement policy.

Kennedy will be under pressure to keep antitrust as stern as Robert A. Bicks made it, and to tighten it in some areas. Veteran antitrusters want to go after more completed mergers. Sen. Estes Kefauver wants fewer consent decrees than Bicks allowed, and more attention to price-fixing.

Parting advice from Eisenhower underscored the GOP antitrust record for the Democrats. Eisenhower asked Congress to require companies to report proposed mergers, to give the Justice Dept. power to investigate when it is planning civil antitrust actions, and to allow FTC to delay proposed mergers with preliminary injunctions.

•

Pentagon oil-buying practices meet the standards of the Senate small business subcommittee. For some commodities, the committee wants more bidding, less negotiated purchasing. Committee investigators, who watch the Military Petroleum Supply Agency closely, say they'd be happy if all military buying was as competitive as oil.

•

Coal industry strategists expect to have a fuels policy study made right where they want it—in Congress. They foresee smooth sailing in the Senate, and no problem with the House Rules Committee, where their bill died last year. They're less certain about the full House.

President Kennedy would prefer to have Congress do the job, coal strategists think. They predict that the hopes of some oil men for a study by the Administration will fade if Congress is ready to move.

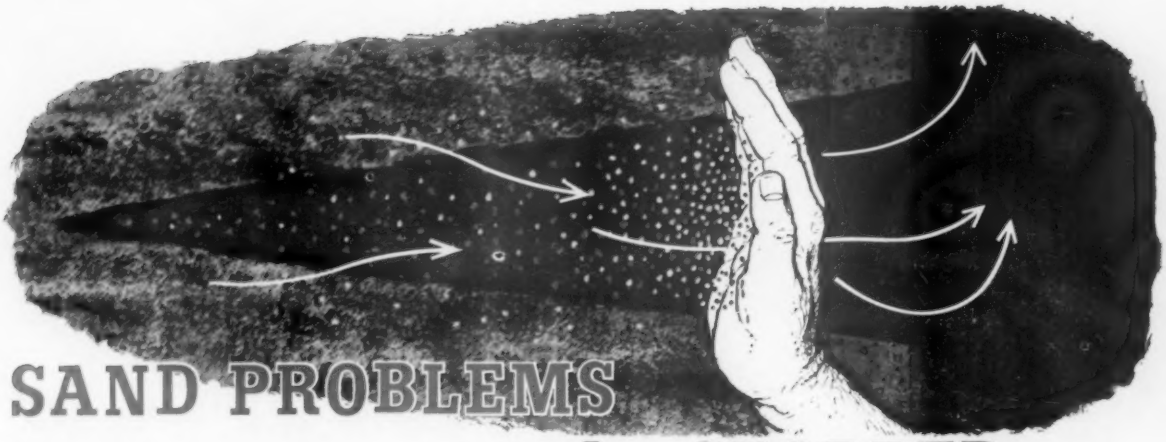
•

Federal tax incentives to do business abroad are threatened by Kennedy Administration concern over balance-of-payments shortages and recession. Treasury Secretary Douglas Dillon will give Congress his proposals by Apr. 1. He hints that they call for ending some foreign tax credit provisions, particularly in so-called "developed" countries. Tax incentives for private investment in "underdeveloped" nations should be safe, because Dillon sees these lessening the need for direct U.S. aid. Dillon isn't specific on foreign depletion provisions.

Dillon insists he is "open-minded" on the question of congressional review of the percentage depletion provision of the tax law. He refused during the Senate Finance Committee hearings on his appointment to be drawn into a detailed discussion of the new Administration's views on depletion.

•

A price tag has been put on the Interior Dept.'s new helium conservation program, but it may be changed. Eisenhower suggested $12-million for March through June, to get the program off to a fast start, plus $15-million for fiscal 1962. Kennedy or Congress may disagree.



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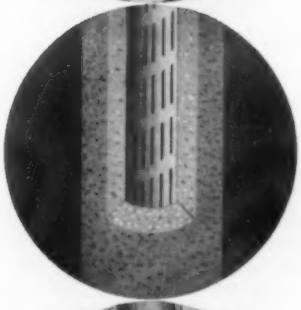

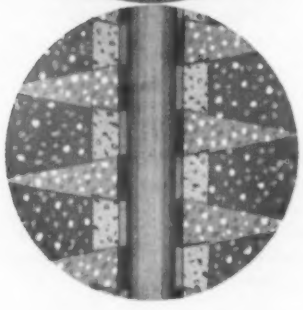

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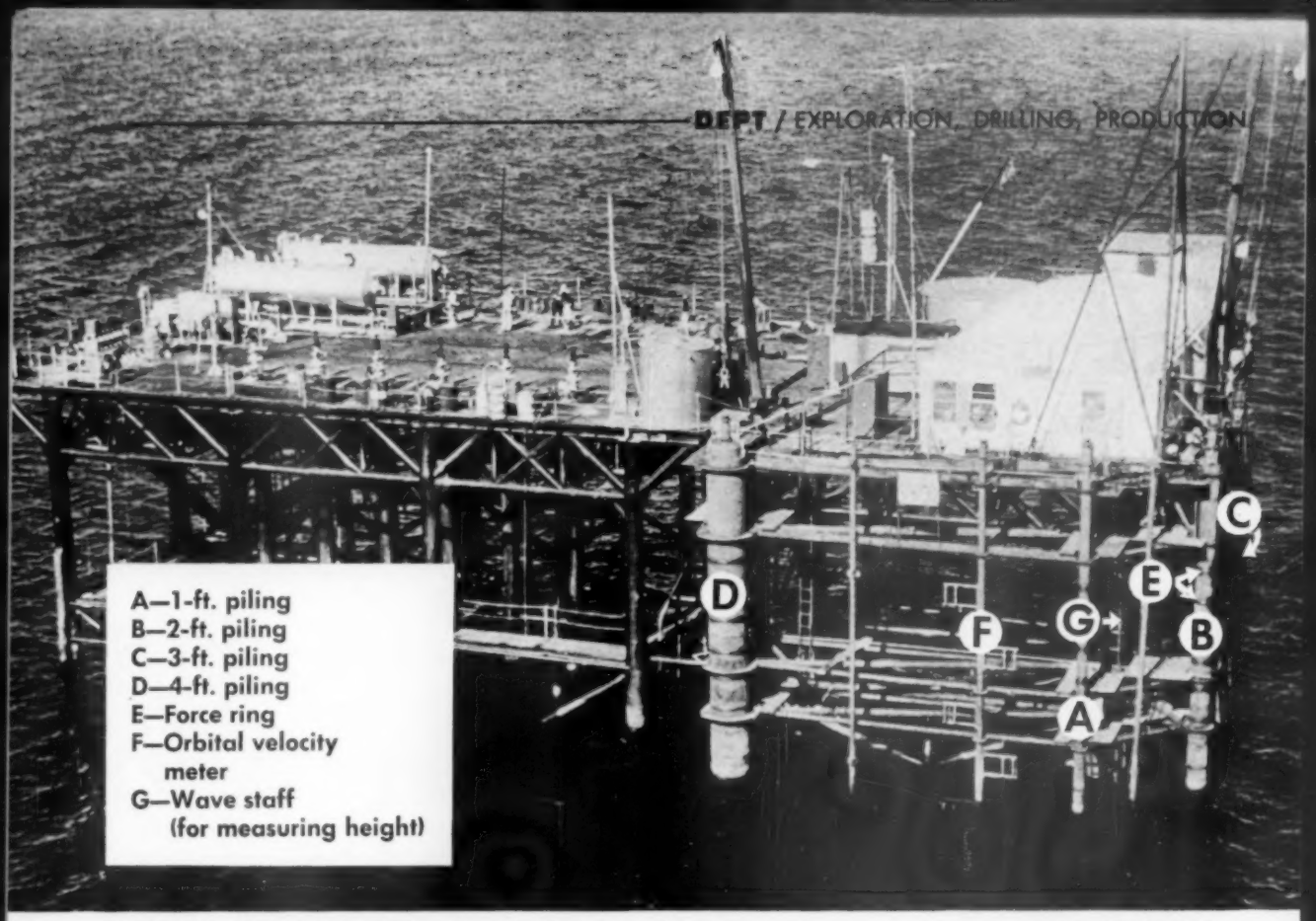


PLATFORM AND EQUIPMENT used on the first phase of the wave study program were set up at Bay Marchand, La.

Wave Study Pinpoints Platform Needs

A wave research program is helping California Research Co. cut costs in building offshore platforms.

California Research Corp. is well along into the second phase of a wave-action study that has already enabled it to build cheaper and better offshore platforms.

When data from the second phase is obtained, analyzed, and added to the first, the company says, it will know accurately the forces exerted by ocean waves on offshore pilings for all practical conditions of wave height, period, and water depth.

This week's collapse of a "Texas Tower" in the Atlantic Ocean off New Jersey emphasizes the potential value of such a study.

Instruments for the second phase —or Wave Project II—were installed last August on a South Timbalier platform, 20 mi. off the Louisiana coast. The project has not yet been hit directly by storms. Despite two hurricanes so far this year in the Gulf, the water hasn't been raised high enough to turn on all the equipment. Some results have been plotted, but the highest the water has gone is 9 ft.

The first phase of the study helped cut costs by pointing out where fewer—but usually larger—pilings could be used to support an offshore platform.

The over-all saving is in the amount of steel used and the number of joints needed.

Although this trend was well-established before the wave study, the project greatly accelerated its acceptance.

For instance, prior to 1957 a typical offshore production platform was supported by 32 pilings of 24-in. diameter and ¾-in. wall thickness. Such a platform might contain production facilities for five wells.

Today it is possible to support a 12-well platform, the company says, with only four steel members, each 36-in. in diameter with 1⅜-in. wall thickness.

Although heavier members are required, the amount of steel is reduced considerably.

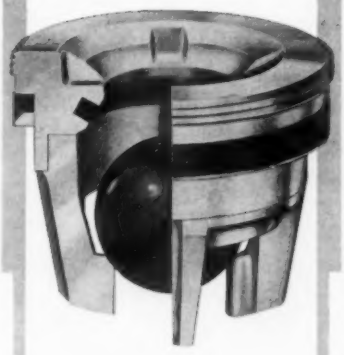
(This saving is tied in with other tests on the ocean bottom. Soil engineers have been devising ways to sink pilings deeper—the optimum depth is being determined by tieing in the results of the soil tests with wave tests. Sinking the pilings deeper adds to the amount of steel needed, but still represents a saving.)

For certain components of the platform, such as pilings or cross beams, costs have been cut up to 30% as a result of this improved design information.

Since the start of the initial project, more than 20 platforms have been built using knowledge gained from the study, the Standard Oil Co. of California subsidiary says.

"That is to say," reports one mem-

NEW FROM BAKER! TWO VALVES THAT INSERT IN CASING COUPLINGS



BAKER INSERT FLOAT CHECK VALVE

PRODUCT NO. 176

Replaces a conventional float collar in wells of moderate depth. It features the famous Baker "floating ball" that has successfully landed and cemented more strings of casing than any other type of back-pressure valve.

The Baker floating ball brings the ultimate in simplicity to the design. No springs, guides or hinges are needed.

Baker Insert Valves are constructed entirely of aluminum, plastic and rubber for ready drillability.

WRITE FOR BULLETIN 382

New folder gives facts of serious interest to the operator who is considering use of insert equipment. Address:

Baker Oil Tools, Inc.
P.O. Box 2274, Terminal Annex
Los Angeles 54, California

In wells of moderate depth, these new insert valves offer convenience and economy. They also offer many of the features that have made conventional Baker floating and fill-up equipment so dependable and so widely accepted.

IMPORTANCE OF THE VALVE-TO-CASING SEAL

A foot of concrete surrounds the valve in a conventional Baker collar. The insert valve must provide this valve-to-casing seal in a *one-inch* space—with varying casing weights and make-up.

Seals so located that they rely on the pin above for back-up, tend to extrude and to leak—especially in lightweight casing. Baker's seal is backed by the metal of the valve itself. The underside of the seal is tapered and it is backed-up by a metal ring with matching taper. This combination of proper location and design enables it to seal-off against pressures from both above and below, in a wide range of casing weights, without interfering with joint make-up.

AUTOMATIC VARIABLE-ORIFICE CASING FILL

As described at right, the Baker Insert Flexifill Valve gives you genuine variable-orifice casing fill—for maximum convenience and protection from pressure surges. Why settle for less?

Your Baker Man will gladly explain the important differences in available Insert Equipment.

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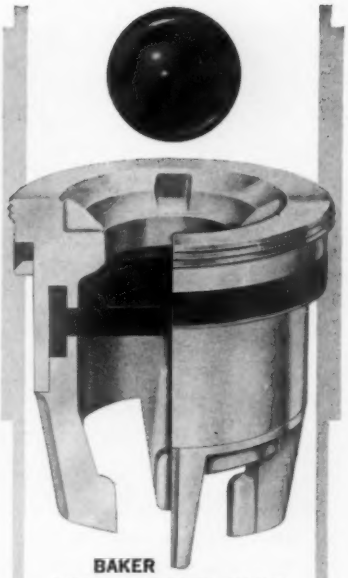


BAKER INSERT FLEXIFILL VALVE

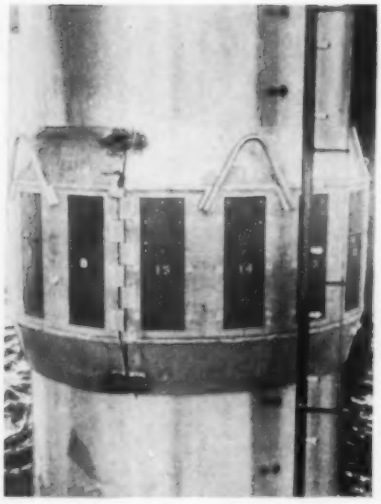
PRODUCT NO. 177

Incorporates the same ingenious automatic diaphragm found in the popular Baker Flexiflow fill-up collar. .

In running-in, as the pressure below the valve increases, the opening in the diaphragm becomes larger, and the casing fills faster. As the pressure decreases, the hole contracts and the casing fill slows. The result is automatic control of fill and maximum relief from pressure surges with no casing flow-over.

The advantages of a variable orifice are obvious when compared to a pre-selected fixed opening.

Circulation is carried out as desired. When on bottom, a ball is dropped down the casing and pumped through the diaphragm to provide a ball-type back-pressure valve for cementing.



WAVE FORCE METERS, clamped on pilings, consist of 16 force transducers.

WAVE STAFFS had to be modified for good readings because of marine growth.

ber of the staff, "that very early findings were put to work immediately."

Wave Project II, in water 100 ft. deep, was felt necessary because (1) of the difficulty of extrapolating findings in 30 ft. of water to 90 or 100 ft. and beyond, and (2) more information was needed.

At the time of the initial project, it was believed that results could be extrapolated idenfinitely to greater depths. However, later observations indicated that results could not be applied with desired reliability much beyond 90 or 100 ft. Consequently, the second project got under way in 100 ft. of water.

Cal Research says that these results will be extrapolated to 300 ft.

Early in the analysis of Wave Project I data, it became apparent that more information on wave forces was required, and that better equipment was needed to get it.

Basically, says one member of the research team, costs are decreased by allowing smaller factors of safety.

"Anybody can build a platform that will never be blown down," he points out. "But the problem is to build the least expensive platform that will still be safe during its period of operation."

"Six years ago," says the researcher, "our designers had little factual information to work with. Now we know a little about what we'll find out there."

Wave Project I was operated through early 1959 and then dismantled. The equipment weathered a good number of tropical storms, including Flossie (1956), Audrey (1957), Bertha (1957), Esther (1957), and Ella (1958). Automatic data instruments recorded 15,000 ft. of records.

Cal Research processed the data at its La Habra (Calif.) laboratories, using semiautomatic processing equipment. Forces from 600 of the highest waves were read from the records and plotted on charts or punched onto IBM cards. All of the usual wave-staff records were analyzed statistically to get wave height and period spectra.

The idea for the project was actually sparked in the early 1950s by a company survey.

At this time, The California Co.—another subsidiary of California Standard—found that wave force criteria used by different oil companies in designing offshore platforms showed a four-to-one spread. At this point, the company, in cooperation with Cal Research, set up Wave Project I.

The first phase of the project got under way in mid-1954, with the installation of equipment in the Bay Marchand field, off the Louisiana coast.

Concurrently, Cal Research carried on an extensive effort on wave theories and wave height spectral analysis.

Equipment for the project consisted of four force-measuring pilings, 1, 2, 3, and 4 ft. in diameter; three wave staffs to measure water surface profiles; several wave orbital-velocity meters; and control and recording instruments.

Improved instruments had to be designed before Wave Project II got started, last summer.

So Cal Research and The California Co. designed, built, and installed the needed tools. The experimental setup consists of eight wave-force clamp-on meters, a wave staff, and control and recording equipment. The wave meters are located on one of the 3-ft.-diameter structural piles of the platform. The lowest meter is 80 ft. below mean water level; the highest is placed to record the force from the crest of a 50-ft. wave. The wave staff measures wave heights up to 50 ft.

Seismic Ship Works in 18 In. of Water

Geophysical Service Inc. has taken a new tack in offshore seismic exploration which enables its marine ships to work as close to shore as needed—even in marshy waters. The innovation: Each ship now carries a small turbo-powered launch.

When the big ship is off on a shooting job, miles from nowhere, and conditions call for moving in close to shore, the small launch takes over. The launch, now carried on both GSI's "Sonic" and its new "Texin," is 26½ ft. long and 10½ ft. wide. It is made of moulded ⅜-in. fiber glass, and can operate in only 18 in. of water with either of its twin diesel-jet units in action. The boat was built for GSI by Polymer Engineering, Hitchcock, Tex.

In addition to using the same fuel as the big ship, the launch is outfitted with the same equipment for taking magnetic readings. Equipment and instruments represent an investment of roughly $50,000 for each launch, with the boat itself costing an additional $12,000. Each carries a 2,600-ft. cable when in operation, about 2,300 ft. of which is used for actual information.

GSI's ships also have equipment for automatic control of seismic operations.

On the "Texin," it's called a Time Coordination Unit, and it automatically controls the playing out of cable during shooting, controls firing, turns the camera off and on, turns off charging units, and starts instruments.

MILWHITE MUD SALES AT

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HOUSTON, TEXAS

DIVISION OF MISSISSIPPI RIVER FUEL CORPORATION

Dow division uses X-TRU-COAT for a 30-mile run through swampy Louisiana soils

Dow Chemical Company's Louisiana Division selected 4½″ O.D. X-TRU-COAT (Republic's *plastic-coated* line pipe) for a service installation involving long runs through swampy soils near Plaquemine, Louisiana.

A 30-mile pipe line was needed to transfer products between Dow's Plaquemine facility and storage points. Dow specified X-TRU-COAT on the basis of corrosion-resistance, ease of installation, and overall cost comparisons.

The high density polyethylene coating of Republic X-TRU-COAT is continuously extruded over "live" undercoating to seal out electrolytic action. X-TRU-COAT is immune to ground chemicals and resists shipping, stringing, and backfilling damage.

X-TRU-COAT Plastic-Coated Line Pipe (Republic coats it at the pipe mill) is available in 1.050″ through 8.625″ O.D. You can also have the coating on Republic Light Wall—in 1″ through 4″ nominal—for gathering and distribution systems.

The complete package includes Republic X-TRU-COAT, X-TRU-TAPE Joint Wrap, and X-TRU-PRIMER. For information or quotations, call your nearest Republic representative or mail the coupon. X-TRU-COAT is produced under the Dekoron® Process.

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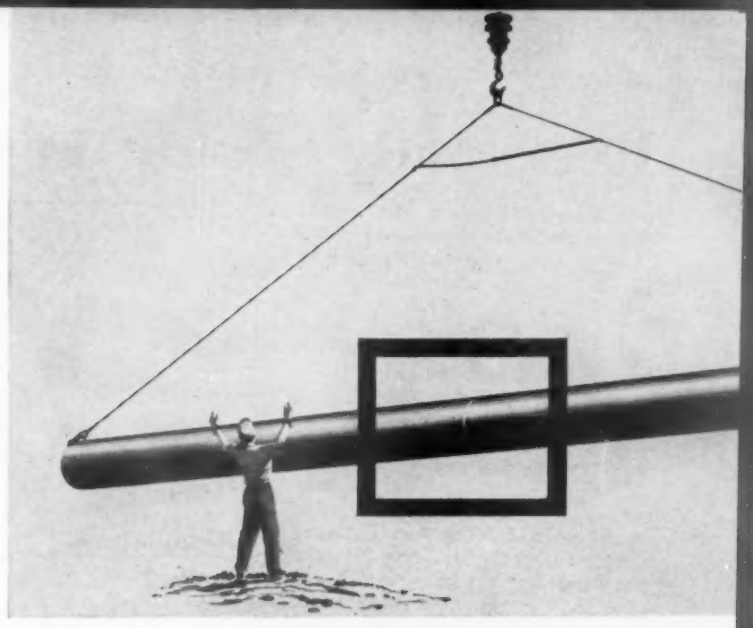
Dependable



REPUBLIC SUPER-SPAN

Specify fusion weld in these 60-foot lengths and make 33% fewer field welds. SUPER-SPAN is produced by joining two 30-foot lengths under ideal submerged arc welding conditions. Hydraulically expanded and hydraulically tested, this pipe is straight and strong . . . offers uniform wall thickness, constant circumference, and accurate size. Available in 24″ through 30″ O.D.

REPUBLIC LIGHT WALL

You save up to ⅓ the weight, ⅓ the cost. Of special interest for low pressure gathering and distribution applications, Republic Light Wall is manufactured to applicable parts of API specification 5L, in sizes from 1.315″ through 4.500″ O.D. For maximum corrosion-resistance, you can have Republic's X-TRU-COAT plastic coating in all light wall sizes.

REPUBLIC SRK® PLASTIC PIPE

Unaffected by crude oil, brine, or gas, SRK saves time and money in many oil field jobs. It costs no more to buy than ordinary pipe. Available in sizes from ½″ through 8″, SRK is a semi-rigid plastic pipe that cuts with a handsaw. It is joined with plastic fittings and can be installed in combination with existing metal lines. Mail coupon below.

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Reef Study Could Aid Oil Hunters

Research now under way on the Campeche Bank, off Mexico's Yucatan Peninsula, may add significantly to the industry's ability to find and exploit reef-type reservoirs.

The reefs at Campeche are of the type in which petroleum accumulations have been found. Although a great deal of similar work has been done in the Bahamas, the Campeche area had not been investigated thoroughly until recently.

Such reefs, because they rise from relatively shallow banks, are called bank-type reefs. They are distinctly different from the atoll type found in the Pacific.

While the current research is far from finished, it already promises to provide some direct benefits to the petroleum industry.

The program is part of a Texas A. & M. College study—headed by Brian W. Logan—of carbonate sediments in reefs.

The study began primarily as one of carbonate sediments and the transportation of such material from the bank into deeper water.

During the year and a half the study has progressed, however, the program has been expanded.

Logan, a research scientist in the college's Dept. of Oceanography & Meteorology, says, "We are just now starting to tie up some of the ideas" that have begun to develop from the work.

He adds: "Some of the results should be interesting to the oil industry because such reefs have been found to be petroleum reservoirs.

"There is a probability that a better understanding of them might help in predicting the occurrence of such structures beneath the surface and permit more intelligent drilling of them."

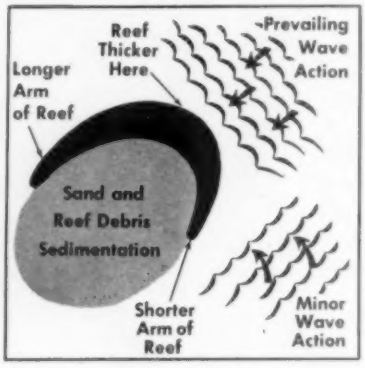
Several tentative conclusions have already been reached. One of them is that a reef trend seems to follow a definite contour line.

If such is the case, the margin of error in extrapolation between known reefs could be narrowed.

At Campeche, Logan explains, the reefs are situated "all around the edges" of the 190-ft.-depth "terrace."

"This is a trend, if you like," Logan says. "So, if you should pick up this kind of situation during drilling, you might be able to extrapolate for new reefs.

"By determining the contour line and drilling along it, the chances would be better of finding additional reefs. In other words, for a bank reef, there is a particular depth level."



WAVE ACTIONS are a major factor in determining shape of bank-type reefs.

Another resulting theory is that environmental factors give the reef its characteristic crescent shape.

An understanding of this process can guide an operator in spotting productive drillsite locations.

Coral thrives in agitated water. It builds against the destructive capacity of waves, current, and similar factors.

This is what gives such reefs their characteristically crescent or horseshoe shape.

"The direction of wave advance on the Campeche Bank is from the northwest," Logan continues, "and there is another prevailing, but minor one from the southeast.

"The arm of the crescent that faces the northeast is very much larger than the arm that faces the southeast.

"It's a growth feature. It's like a plant in a windy region, which grows away from the wind."

On the other hand, sand and reef debris pile up in the lee of the arms, with an adverse sedimentation condition for coral.

"By a better understanding of these factors, operators could more intelligently drill a reef-type structure, realizing when they were on one arm or the other, in the lee, on the weather side, the probable shape of the reef, and so on," Logan notes.

"In other words, there is a possibility of being able to say, when drilling adjacent to a reef, which direction would put the well closer to the reef."

Hydraulic Jar Aids Fish Job

A California inventor has come up with a hydraulic jar with a larger-than-usual inside diameter, to aid drillers in releasing stuck pipe.

The tool has been patented by Wayne N. Sutliff, owner of a Bakersfield (Calif.) machine shop, and holder of earlier patents on hydraulic jars. The jars are tools run on a drill string to jar stuck pipe or fishing tools out of the hole.

The new jar has been successfully field-tested, the inventor says, in the Ventura Avenue field, Ventura County, Calif. It has a 5¾-in. outside diameter, and a 2-in. inside diameter. The inside diameter compares with an average of 1¼ in. for existing hydraulic jars. The tool is 5 ft. long.

The larger inside diameter makes it possible, if necessary, to run shot lines through the jar, and to run pressure recorders or instruments that tell where pipe is stuck.

Drillers are said to be able to "spud" with the new tool without danger of bursting the hydraulic cylinder.

"Spudding," in this instance, is the taking of a strain on the drill string, followed by the sudden release of the strain, causing an effect in the drill string somewhat like that in a rubber band when stretched, then released. It is sometimes used by drillers to free pipe stuck up the hole, and sometimes when pipe is stuck on bottom.

The main difference between the new tool and other hydraulic jars is that the new one has a tiny orifice across the sleeve-type valve through which hydraulic oil may pass if and when the sealing edge of the valve expands.

One of the problems with hydraulic jars in the past has been the tendency of the sleeve valve, which is usually made of brass alloy, to expand. This makes it impossible for hydraulic oil to pass between the sleeve valve and the cylinder.

Since the jar depends for its jarring action on the pulling of the sleeve valve through a restricted cylinder into an enlarged cylinder, and since the passage of hydraulic oil between the sleeve valve and the cylinder is an integral part of the action, the swelling of the sleeve valve under pressure with its attendant shutting off of the hydraulic oil has the effect of inactivating the jar.

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SOLTEX—a modified, high molecular weight hydrocarbon compound—is a black, free-flowing, flake material that is soluble in both oil and water. *It was developed primarily for stabilizing shale sections,* but in extensive field applications SOLTEX has proved its successful performance in many varied drilling and completion operations.

The economical addition of SOLTEX to drilling fluids has saved many wells which were scheduled to be abandoned because of formation sloughing, pipe sticking, and lost circulation encountered in highly compacted and horizontally stressed shale sections.

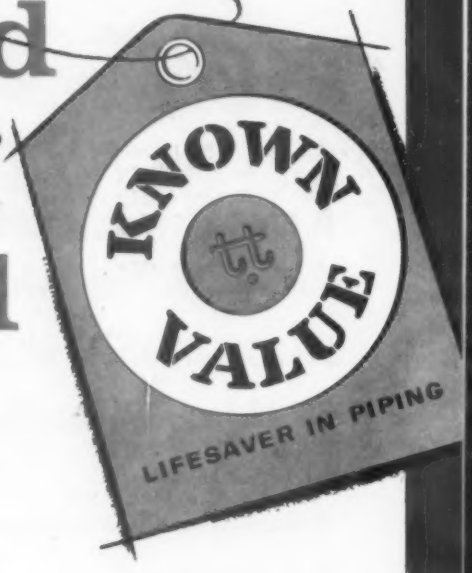
In many test wells drilled under more "normal" conditions, SOLTEX modified drilling muds have produced remarkable savings . . . ranging as high as $23,000 from reduced drilling time, less bit wear, etc. Mud engineers associated with SOLTEX field applications agree . . . "It's one of the most important mud discoveries since DRISCOSE, the original CMC material." When used with DRISCOSE , it further increases the range, speed and over-all economy of your drilling operations.

For more complete information on SOLTEX —contact your mud dealer or see your Drilling Specialties Company representative.

*Trademarks

DRILLING SPECIALTIES COMPANY
Bartlesville, Oklahoma

Be sure of this standard to be sure of the standard you specify



The TUBE-TURN trademark is more than a *trade* mark. It identifies a *standard* of performance and satisfaction. It has universal recognition and acceptance as a mark of *known* value.

TUBE-TURN components for welded piping systems are the product of decades of pioneering, of a wealth of experience without equal, of an investment in related research and engineering exceeding that made by all other such manufacturers *combined*. These are important considerations in this era of widespread deceit and subterfuge.

Simply copying TUBE-TURN products is an obviously easy shortcut to look-alike substitutes. When such impostors sneak into jobs through the "or equal" loophole in many specifications, however, it is impossible to be sure they meet TUBE-TURN standards. Only costly and time-consuming laboratory testing can prove it. And such testing, if undertaken, cannot be conclusive because the proper tests destroy the samples and there is never assurance of uniformity in any quantity delivered.

The substitution of *anything* for genuine TUBE-TURN welding fittings and flanges is difficult to understand or justify. TUBE-TURN quality demands no premium. TUBE-TURN products are always priced competitively with truly comparable items. Any so-called "bargain" substitutes *must* be substandard in value! What "saving" can possibly justify the risk involved when a single failure may easily result in losses greater than the cost of the entire piping installation?

Inferior Substitutes Can be Avoided!

Specifications calling for TUBE-TURN products with the customary "or equal" wording need not be the open door to risk or trouble. Responsible suppliers and contractors will not only serve you honestly and properly, they will be glad to provide proof of it. They will give you an affidavit that they have met your specifications to the letter . . . and they will identify and describe whatever substitutes they elected to supply within the "or equal" latitude allowed. This is a sensible procedure for everyone concerned. Write us today for a copy of Bulletin 1031-A228 on this subject. TUBE TURNS, Louisville 1, Kentucky.

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Tube Turns offers not only the most complete line of properly engineered welding fittings and flanges for utmost flexibility in planning any piping installation, but a wealth of technical data and able engineering assistance without counterpart anywhere in the world. Standardizing on TUBE-TURN piping components saves time and trouble.

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The world's most complete line of welding fittings and flanges, over 12,000 regularly stocked TUBE-TURN items, permits every specification to be met without compromise or delay. A fully responsible Tube Turns Distributor is as near as your telephone to give prompt delivery of *all* your needs from *one* source on a *single* order. Saves time, paperwork, multiple checking, piecemeal deliveries and the inevitable problems of divided responsibility. You *save* money when you standardize on TUBE-TURN piping components!

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Time is money in the assembly of a welding piping system. TUBE-TURN welding fittings and flanges do not require remanufacture or compromises . . . or the delays that result from rejections. They are uniform, precision-engineered for easy, time-saving installation. And you can put them in and *forget* them because they *are* dependable. TUBE-TURN piping components cost less because they save more in every way!

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ANOTHER **HOMCO**
DIRECTIONAL DRILLING
SUCCESS REPORT

Two Directional Drilling problems where Homco equipment saved hours of rig time

Gulf Coast independent operator says:

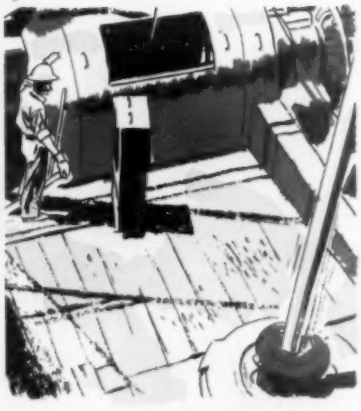
"Homco's Mechanical Orienting Tool saved me eight hours and fifteen minutes wire line time on two settings below 14,000 feet."

Terrebonne Parish, Louisiana

1. First whipstock was set at 14,363 feet with conventional BHO method and checked. Time required to orient tool was four and one-half hours. Second whipstock was set at 14,821 feet using a 6" O.D. Homco Mechanical Orienting Tool. Time required was thirty minutes. (Results were perfect.)

2. Third whipstock was set at 15,080 feet with the same Homco Mechanical Orienting Tool. Time required fifteen minutes. (Perfect results.)

3. The Homco Mechanical Orienting Tool saved more than four hours rig time each time it was used. It also eliminated the hazard of stuck pipe as the string can be actuated and circulation maintained. Abnormally high temperatures and extremely heavy muds have no effect on this tool.



Homco Mechanical Orienting Tool*

The HOMCO Mechanical Orienting Tool presents a new concept for orienting whipstocks and deflecting tools without the use of subsurface surveying instruments, which previously required two or more trips with a wire line to correctly orient the deflecting tool. The drill pipe is raised, rotated, and lowered until a ball falls into a slot which permits the tool to close and indicates that the deflecting tool is correctly oriented.

ADVANTAGES: Eliminates numerous trips into the hole with subsurface surveying instruments. Reduces orienting time to approximately twenty (20) minutes. Torque in drill string does not affect setting. Not affected by high temperature. Write for Technical Bulletin #51-1-1.

*Patent—U.S. Letters Patent No. 2,686,660

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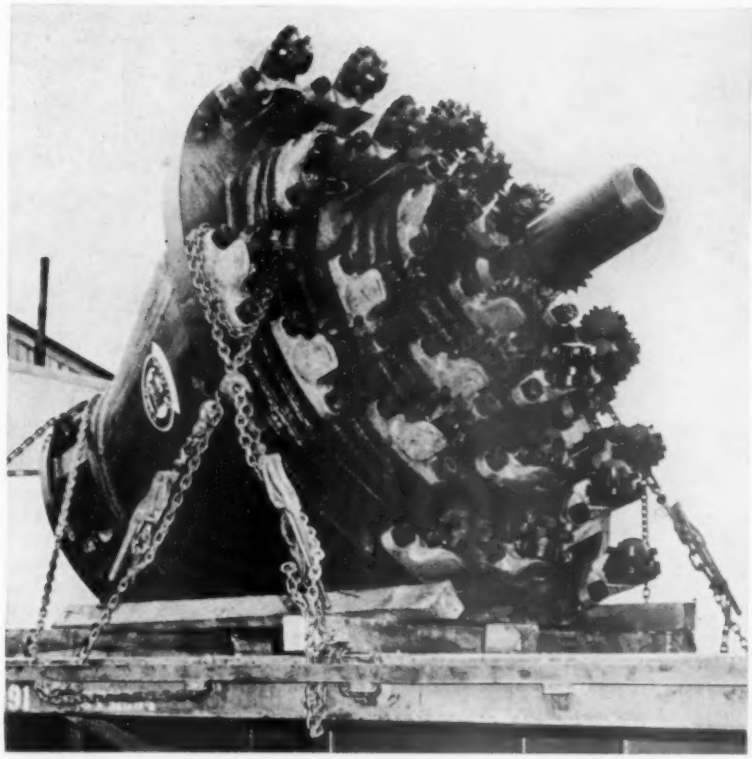
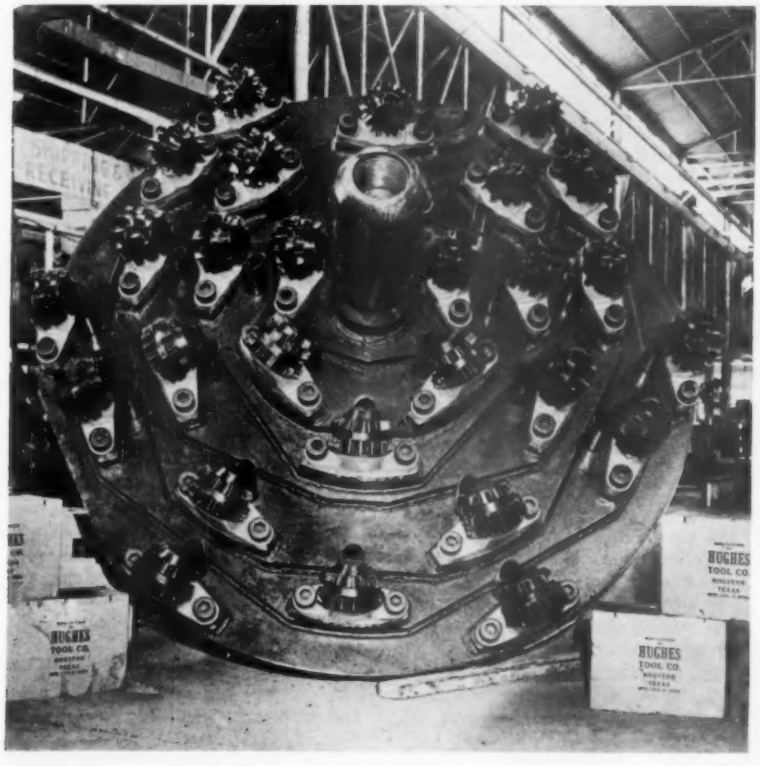
Massive 15-Ft. Drill Bit Gets Trial Run



THIS 90-IN. BIT was used by Kerr-McGee Oil Industries, Inc., to sink a 710-ft. mine ventilation shaft in New Mexico. It has 28 separate cutting bits on its base.



● It's twice the size of the largest bit now in commercial use (picture)

A 15-ft. drill bit is being tested by a Hughes Tool Co. subsidiary in Dallas. It's part of the company's drive toward adaptation of oil well equipment to large-diameter drilling.

At the end of December, there were four large-diameter holes being drilled in the U.S., and Hugh B. Williams Mfg. Co. had equipment on each of the jobs.

Historically, Williams has been an oil field construction and drilling equipment firm. Hughes bought the company in February, 1959, and since then, concentration has been on large-hole applications.

Currently, some 75% of Williams' business is still in the oil fields, and 25% in what it calls the "industrial field." The company is aiming to increase the industrial portion of its business.

The experimental 15-ft. bit has four conical-shaped, bar construction rolling bits, with roughly 75 replaceable teeth per cone.

Williams is using a modified oil well rotary drilling rig in experiments with the bit. Equipment on the rig includes a rotary table with a 62-in. opening; a 4,200-gpm. centrifugal mud pump; a 12-in. inside diameter, 300,000-lb.-load-rating drilling swivel; and 40-in.-by-8-ft. lead drill collars—each weighing 42,000 lb. The bit is 15 ft. by 5 ft.

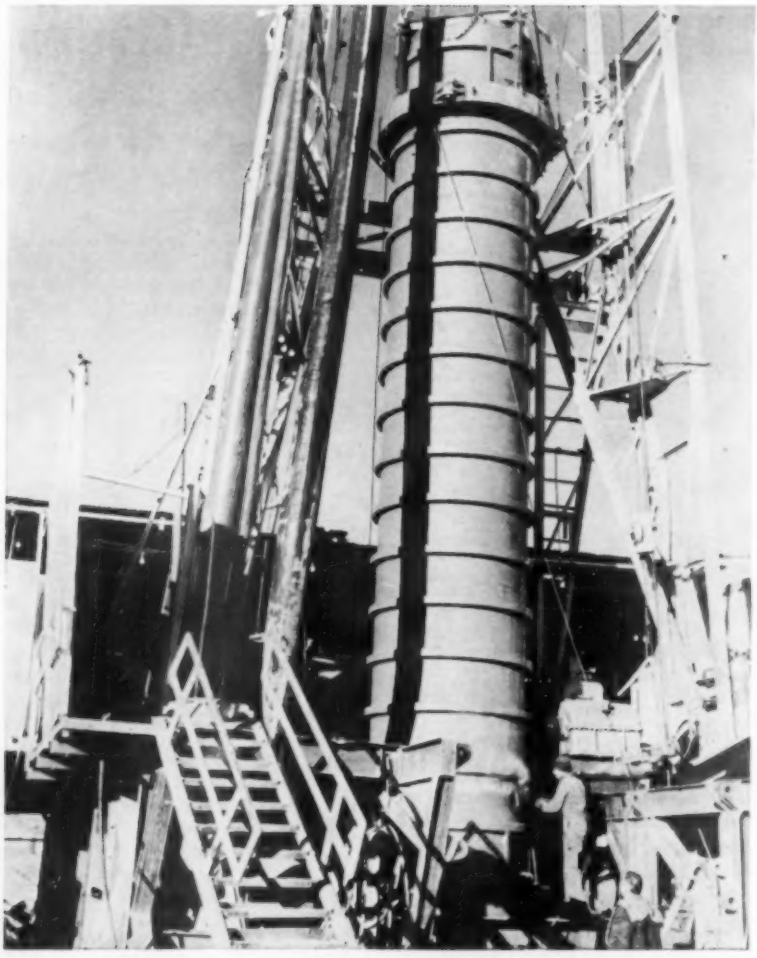
The test bit is inserted through a special substructure, and attached to the drillstem below the rotary table.

On its current experiment, Williams is drilling a 62-in.-diameter hole to a depth of 82 ft. The 15-ft. bit is then used to ream the hole to a depth of 30 ft. No fluids are used in the preliminary reaming, which is carried out in one operation.

In the meantime, a 30-in. diagonal shaft is being drilled to 70 ft., through which 10-in. casing will be set, and a 2-in. air line inserted. This will be used to provide a fluid circulation for reaming the 15-ft. hole to the total 82-ft. depth.

Williams officials point out that the tests, so far, are experimental, and that the company does not know how long it will take to prove the bit before applying it to commercial use.

The bit is twice the size of the company's biggest commercial bit (pic-



GIANT CASING, fabricated in 32-ft. sections, was welded one section to another as it was lowered into the 90-in. diameter hole. Casing was ribbed for added strength.

tures, page 33), which has been used to complete a 710-ft. uranium mine ventilation hole for Kermac Nuclear Fuels, Inc.

The methods used in drilling the hole marked a radical departure from conventional ways of excavating mine shafts.

Kerr-McGee Oil Industries, Inc., as contractor, hauled its rotary rig No. 7 from Lamesa, Tex., to drill its subsidiary's shaft. The hole is in the Ambrosia Lake uranium district, near Grants, N.M.

The mast stood 133 ft. above ground level, and the rig was powered by two 325-hp. Waukesha engines. An Allen-Sherman-Hoff pump, powered by a 250-hp. Cummins diesel, provided a maximum of 8,000 gal. of mud a minute through a 12-in. line.

The 90-in. drill bit, cone-shaped and weighing 17,000 lb., has 28 separate rolling cutter bits mounted on its base.

The special bit cost in excess of $10,000, and has three lead-filled drill collars—each weighing 42,000 lb. Diameter of the drillstem was 13⅜ in., and total weight of the bit assembly was 147,000 lb.

On the New Mexico job, drilling averaged 2.8 ft. an hour, with the bit turning between 12 and 16 revolutions a minute. Approximately 100,000 lb. of the total weight were applied.

The previous largest rotary-drill hole in the Ambrosia Lake district was 44 in. in diameter.

Casing used in the hole had a 78½-in. outside diameter and a 72-in. inside diameter. Ribbed for stiffness, the casing was fabricated in 32-ft. sections, with each section welded on as the casing was lowered into the hole (picture, above). Says Kerr-McGee, "We ran that in 32 hours to the bottom."

The ventilation pipe was fabricated by Grants Pipe & Tank Co.

The rig has been moved to a site 80 mi. northeast of Las Vegas, Nev., where it is now being used to drill a 1,500-ft. hole through solid granite for the Atomic Energy Commission.

Hugh B. Williams Mfg. Co., a pioneer in equipment for large-hole drilling, believes it has "just scratched the surface."

A year ago, Williams came out with a 44-in. bit, which was followed by a 76-in. bit to be used on an atomic energy project.

The 90-in. bit used in New Mexico, the company says, represents the latest and largest bit to be tried commercially.

Williams' large-diameter equipment has already been used for such jobs as drilling large holes for bridge piers and for mine work. And it is now eyeing the field of missile base construction.

API Fights Rules On Rig Antennas

The American Petroleum Institute is fighting some proposed Federal Aviation Agency rules that would limit the height of radio antennas attached to oil derricks.

API presented its objections to the proposed air safety regulations at a fact-finding hearing in Washington last week. API opposed as unnecessary paperwork one section requiring notification of plans for any structure over 150 ft. tall.

If the structure didn't violate safety standards, FAA wouldn't object to construction, but would simply require notice when the 150-ft. level was reached.

According to the proposed rules, API pointed out, "an elevation of 170 ft. appears to be controlling" as a safety standard.

API suggested an amendment so that notice would be required only on structures 170 ft. or higher. It noted that many derricks top 150 ft., but few exceed 170 ft.

Second, API pointed to a potential conflict between FAA and the Federal Communications Commission, which licenses radio systems. And it called for a definition of jurisdiction of both.

Conceivably, API said, a proposed radio antenna could be approved by one agency, and rejected by the other.

Third, API asked for a reconsideration of the proposal to set up safe central areas, called "farms," for antennas in a given region.

API said the farms would not be feasible for the type of communications used in the oil and gas industry, and feared that some day the rules would develop into a requirement that all antennas be housed in such farms.

What's New / IN PRODUCTION

Oregon May Offer Offshore Incentive Plan

Oregon may adopt competitive bidding and some sort of incentive plan to spur tidelands exploration.

These possibilities grew out of a recent meeting called by the state attorney general to consider legislation governing leases to 600,000 acres of offshore lands.

The effort to draft new laws was touched off following recent negotiations between Shell Oil Co. and the Oregon Land Board on Shell's bid for exclusive exploration rights to the offshore acreage. The talks were stymied when Robert Y. Thornton, the attorney general, held the board had no power to deal without specific legislative authority.

•

Subsidence at Wilmington Seen Halted by 1963

California's Wilmington waterflood program has succeeded in slowing shoreland settling caused by oil production and complete arrestment is expected by July 1, 1963.

This opinion was expressed recently by M. D. Hughes, director of the subsidence-control work, in a report to the State Assembly Interim Committee on Manufacturing, Oil & Mining Industry.

The flood program was launched in 1959 to combat the subsidence that seriously threatened continued operation of the large Long Beach Naval Shipyard and the city's dockside harbor facilities. The flood has resulted in the recovery of 7.5-million bbl. of waterflood oil since injection was started.

•

Properties Change Hands

Sam Boren, Dallas independent, and associates have sold 35 oil wells on 500 acres of Boren Strawn pool, Young County, North Texas, for approximately $1-million cash.

The buyers are a group headed by Charles E. Ledford, Winchester, Ky. The wells, six of which are dual completions, produce 400 b/d from the Pennsylvanian. The Boren group will continue to hold and develop other properties in North and West Texas.

Stanton Oil Co., Ltd., San Antonio, has bought 19 oil wells from Western Drilling Co., Inc., Lubbock. The wells are located in the Sunray-Wright Lease, Cochran County, West Texas.

Landa Oil Co., Dallas, has acquired the assets of Texas Business Developments, Inc., a Dallas-based general investment concern. Landa negotiated the takeover by a stock-exchange transaction of an undisclosed amount. The company received in return properties including an office building in Midland, Tex., commercial real estate interests in Dallas, various security investments, and unspecified oil interests in Webb County, Tex.

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Alberta netted $1,364,409 at its Jan. 10 sale of drilling reservations of oil and gas rights covering 122,936 acres.

The 15 parcels are located in central, southern, and northern Alberta. Canadian Fina Oil, Ltd., Pan American Petroleum Corp., and Hudson's Bay Oil & Gas Co., Ltd., jointly paid the highest price per parcel—$303,500 for parcel No. 787, comprising 8,960 acres in the Whitecourt area.

In the Jan. 5 sale, British American Oil Co., Ltd., paid $19,965 for two parcels covering 48,640 acres in southern Alberta. The BA price was highest in the sale, which brought $23,827.

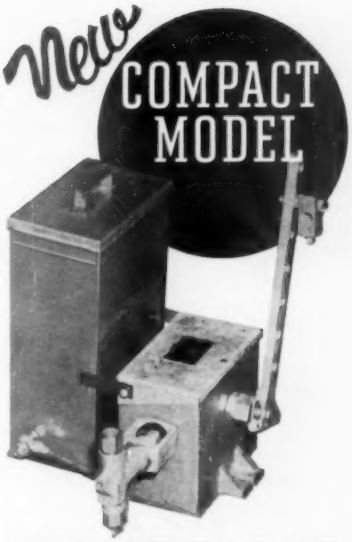
•

Union Oil Co. of California bid $50.12 an acre for 93.86 acres to top bids for oil and gas leases on restricted Indian lands in Oklahoma.

A total of 99 tracts, comprising 6,028 acres, was offered in the Jan. 10 sale by the Muskogee area office. Of these, 74 tracts, covering 2,059 acres, were sold for $28,984. Union's acreage is some 2 mi. south of Marietta, Love County.

•

Directors of Western Hemisphere Petroleum, Tulsa, and DeLuxe Coils, Inc., Wabash, Ind., have agreed on merger plans, subject to stockholder approval. Western Hemisphere owns oil- and gas-producing properties in the U.S. and undeveloped land in



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CHEMICAL
INJECTOR

THE SINGLE-HEAD INJECTOR FOR HIGH CONCENTRATE CHEMICALS REQUIRING SMALLER RESERVOIRS

Texsteam's new 1200 EC chemical injector — like its big brother (Series 1200) — has been designed specifically for beam pumped wells. It operates by direct connection to the walking beam. Having all the performance characteristics of larger more costly models, the 1200 EC is the economy way for injection of emulsion and corrosion inhibitors. Equipped with a two-gallon, stainless steel reservoir, the assembly is easily attached to foundation. Strict control over injected volume is assured by a choice of four adjustments.

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Bolivia, Honduras, and Canada. De-Luxe Coils manufactures electrical and electronic components.

The proposed name of the new corporation is Wabash Magnetics, Inc., with headquarters in Wabash. The company's petroleum operations will continue to be monitored from Tulsa, with Russell Cobb, Jr., president of Western Hemisphere, in charge.

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A series of articles on conservation regulations have been compiled in pamphlet form by Southern Methodist University.

The booklet, edited by Wallace F. Lovejoy and I. James Pikl, Jr., is obtainable for $1.50 from the Dept. of Economics, SMU, Dallas, Tex.

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Drilling Highlights

West Texas—Texaco Inc. No. 9-CB State, section 32, block 4, University Lands survey, Andrews County, flowed 375 b/d of 45.6-gravity oil through 15/64-in. choke and perforations at 13,899-900 ft. in the Ellenburger. The discovery is in the shallow South McFarland Queen sand area, and 5 mi. west of Ellenburger production in the Magutex pool.

In Ward County, Gulf Oil Corp. No. 505 Hutchings Stock Assn., section 53, block N, G&MMB&A survey, flowed 14.3-million cf/d of gas through perforations at 7,388-408 ft. in the Mississippian. The discovery is 3½ mi. east of North Ward field.

California—McCulloch Oil Exploration Co. California No. 1 McCulloch-Duarte, section 17-2n-1w, Contra Costa County, flowed 11.4-million cf/d of gas through 1-in. choke and perforations at 3,890-4,142 ft. and 4,150-4,235 ft. in what is believed to be Domengine sand of Eocene age. The fault block discovery is in the Los Medanos gas field, and the sand section is one of the thickest ever encountered in a California gas well. Absolute open flow is estimated at 85-million cf/d.

North Dakota—Amerada Petroleum Corp. No. 3 Bear Den Unit, section 36-149n-96w, McKenzie County, flowed 712 bbl. of oil and 23 bbl. of water on 19-hour test of the Duperow (Devonian) at 11,284-314 ft. The prospect is 3 mi. north of Duperow production at Lost Bridge pool and ½ mi. south of a Madison discovery in Bear Den pool.

Mississippi—Humble Oil & Refining Co. No. 1 Thompson, section 8-9n-1w, Yazoo County, was completed for 311 b/d of 44.4-gravity oil through perforations at 10,445-53 ft. in the Hosston. The pool opener is 7 mi. east of Tinsley field.

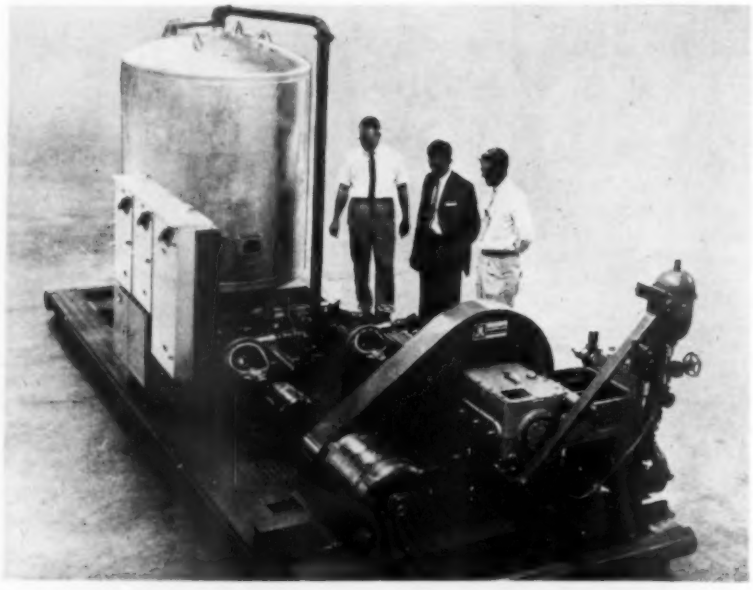
In Pike County, Humble No. 1 May-Love, section 1-4n-7e, 3 mi. northeast of Summit pool, was completed as a Lower Tuscaloosa discovery, flowing 185 b/d of 39-gravity oil through perforations at 10,828-30 ft. The wildcat is 5 mi. west of Little Creek pool.

New Mexico—Sunray Mid-Continent Oil Co. No. 1-X state, section 20-17s-36e, Lea County, flowed 540 b/d of 35-gravity oil through 18/64-in. choke and perforations at 9,002-62 ft. in the Abo reef. The discovery is 1½ mi. south of West Lovington pool.

Oklahoma—Humble Oil & Refining Co. No. 1 Matousek, section 34-19n-7w, Kingfisher County, was dually completed for 268 bbl. of 34.7-gravity oil in 11 hours through 21/64-in. choke and perforations at 6,856-908 ft. in the Manning, and for 15 b/d of oil through ¼-in. choke and perforations at 7,111-347 ft. in the Mississippian. The Southwest Hennessey pool opener is 2½ mi. north of North Dover pool.

In Beaver County, Russell Maguire No. 1-12 Blakemore, section 12-4n-22e, flowed 41-gravity oil at the rate of 634 b/d, based on 6-hour flow of 165 bbl. through ½-in. choke and perforations at 5,527-39 ft. in the Marmaton section of the Pennsylvanian. Dual completion as a gas producer from the Mississippian is planned; the prospect flowed gas at the rate of 5-million cf/d through perforations at 6,603-12 ft. There is no oil production in the immediate area, and closest gas production is 2 mi. west.

Arkansas—J. M. Huber Corp. No. 1 Mabry, section 6-8n-24w, Logan County, was dually completed for 2,830,000 cf/d of gas through 1-in. choke and perforations at 6,745-74 ft. in the Orr sand, and for 802,000 cf/d of gas through 1-in. choke and perforations at 7,013-52 ft., 7,215-300 ft., and 7,328-73 ft. in the Woolsey and Hale sands. The Scranton field opener is 7 mi. northeast of the one-well Paris pool.



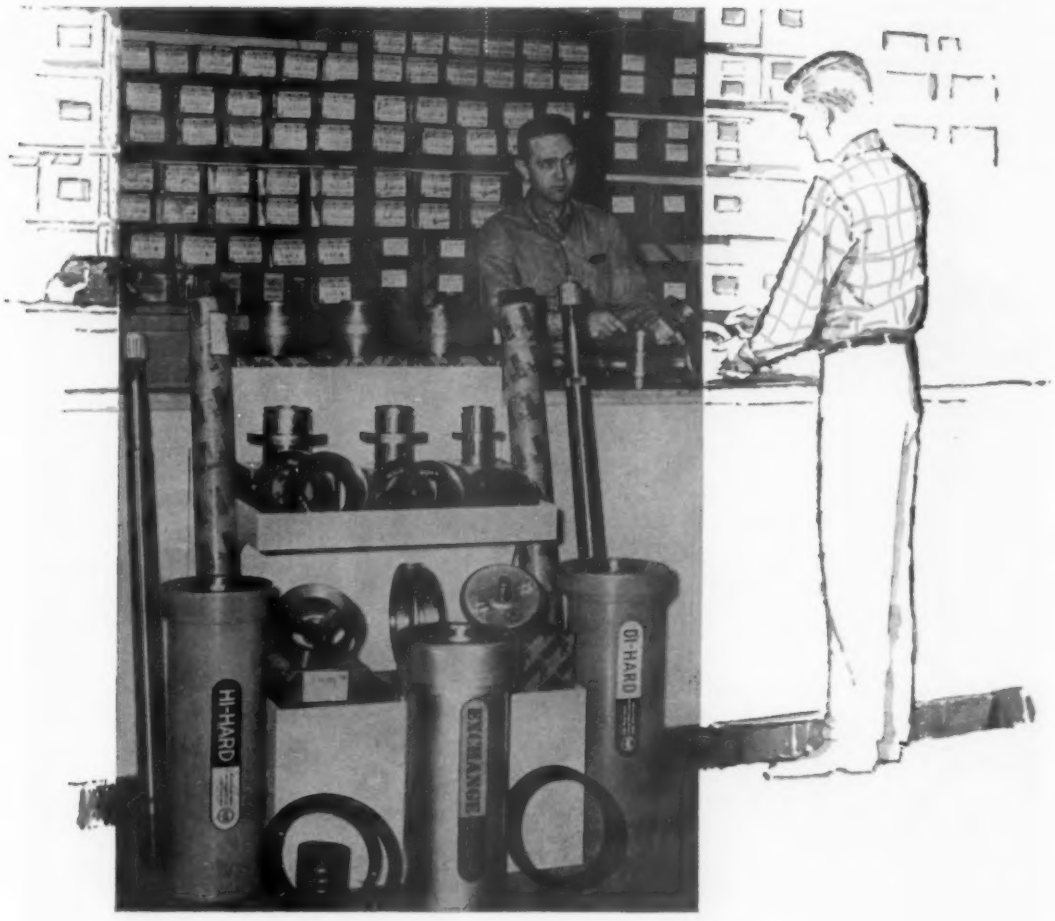
J&L Delivers First Portable Flood Unit

Jones & Laughlin Supply Division has delivered its first portable waterflood unit, to an independent oil company lease near Stroud, Okla.

Components of the compact unit, which include an injection pump and driver, circulating and backwash pumps, water filter, and control equipment, are mounted on a steel skid. A maximum walk-around space provides easy access during operation, and easy maintenance.

Complete controls for automatic operations of pilot floods are centrally located.

Only water and electrical connections are needed for installation at the lease. Capacity of the unit is 2,000 b/d at a maximum discharge pressure of 940 psi.



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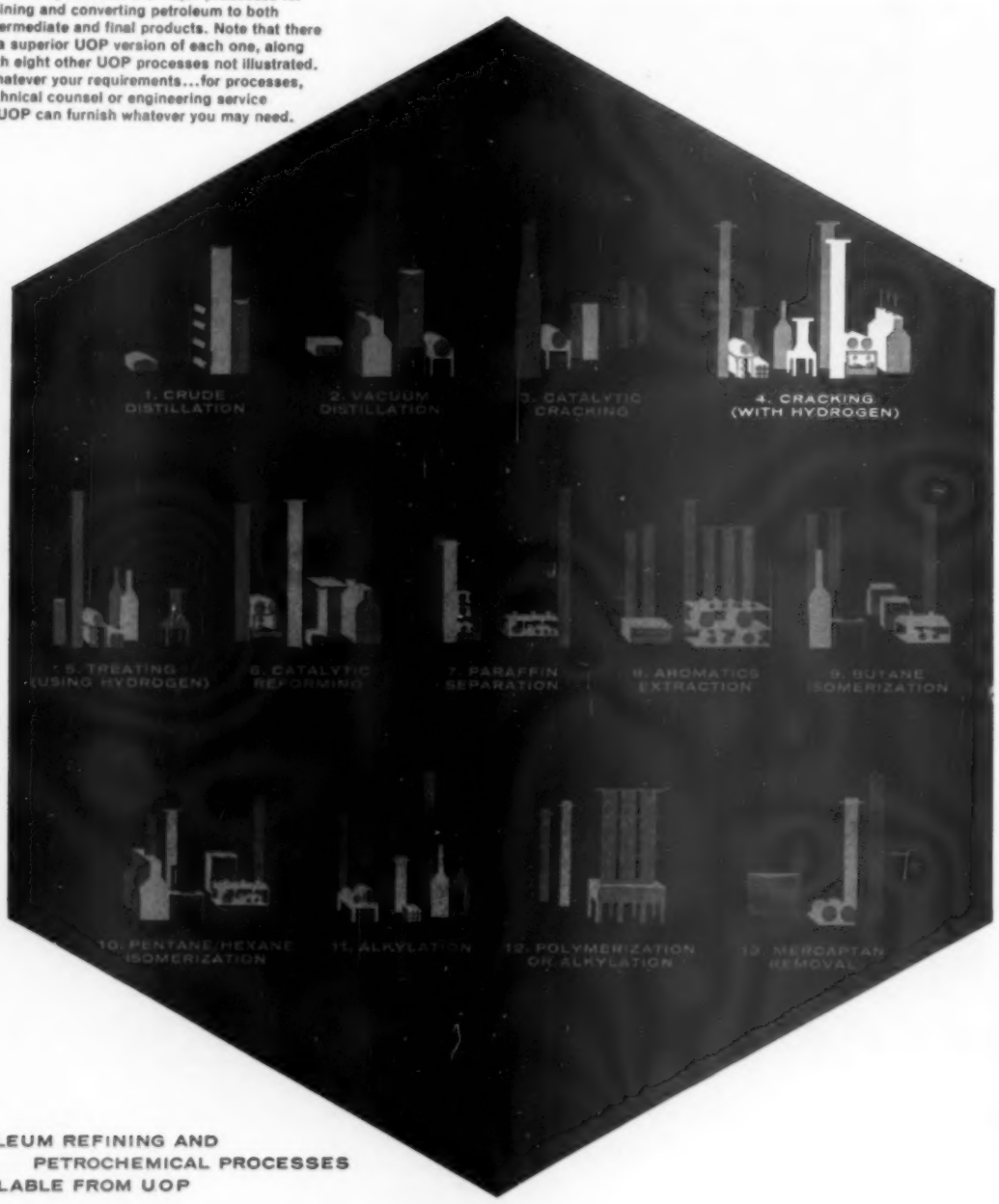
Here are symbolized the major processes for refining and converting petroleum to both intermediate and final products. Note that there is a superior UOP version of each one, along with eight other UOP processes not illustrated. Whatever your requirements...for processes, technical counsel or engineering service ...UOP can furnish whatever you may need.



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UNISOL®—an economical process for treating high mercaptan-containing gasolines.

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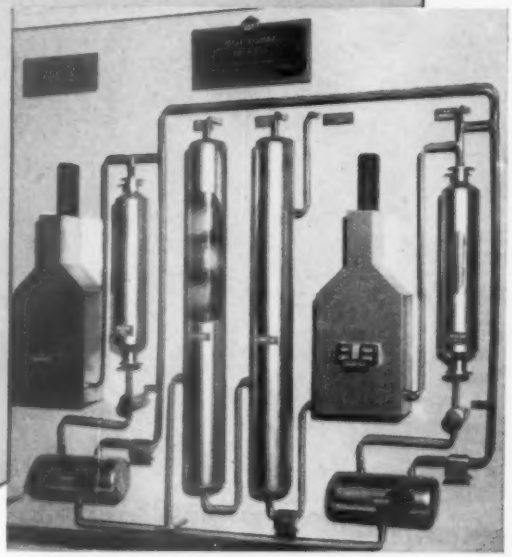
With UOP processes the refiner can accomplish just about anything that comes within the realm of practical petroleum refining technology. Take a look at the brief descriptions on the opposite page, and you'll agree. And remember, in many cases existing equipment can be revamped and expanded, and thereby will produce more saleable products.

*INFORMED OPINION indicates that 1962 will require a substantial increase in process capacity ...NOW is the time to start your planning! Ask us about a preliminary proposal... no obligation!



LOMAX™ With this new and highly flexible UOP process, model of which is shown above, the refiner is able to increase production of his most currently saleable product on a year-'round basis. Through the catalyzed reaction of oil with hydrogen, LOMAX converts middle distillates ranging from kerosines to heavy gas oils into a wide ratio of gasoline or distillate fuels.

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UTILITY BASE STATION RADIO is used by stores dispatcher to relay orders to radio-equipped fork-lift trucks (left), at Humble's Baton Rouge refinery. Supervisors (right) direct maintenance workers through "Handie-Talkies."

In the country's largest refinery . . .

Mobile Radios Simplify Maintenance

Two-way mobile radios are a useful adjunct to a maintenance program in a modern refinery. Over 250 radio units are in operation at the Baton Rouge refinery of Humble Oil & Refining Co.

This 355,000 b/d refinery has 5,600 employes and spreads over 2,400 acres. The two-way radio helps to keep efficiency at its highest level and minimize down-time.

These radios operate in three separate systems: (1) for the mechanical division; (2) for the processing groups; and (3) for the stores department.

The mechanical division group consists of one 60-watt base station manned by a dispatcher in a central "mechanical building," and 156 mobile units installed on heavy construction vehicles and maintenance supervisors' cars.

This system is used essentially to direct men, machines and equipment to various construction and maintenance projects, at the exact time needed.

Rush hours are from 7:30 to 9 a.m. and from 2 to 3 p.m. During these peak periods, the system operates at least 45 minutes of each hour. But even at night, emergency maintenance crews continue to operate as directed by radio from a coordination room.

The process division group consists of a base station and 74 mobile units installed on such vehicles as cars used by operating, management, and plant protection personnel, plant taxis, and plant field trucks. There are 17 control point stations, on various process units and in pump houses.

The stores dept. group consists of a base station and two mobile units on heavy-duty fork lift trucks.

Each system also uses a number of "Handie-Talkie" portable radiophones, for special situations. For example, these are handy for communications between the various floors of a big processing unit, such as a cat cracker (picture).

There are 19 of these "Handie-Talkies," 8 each for the mechanical and the stores division, and 3 for the processing groups.

All these systems are maintained in top operating condition by the manufacturer, Motorola, Inc.

A technician from Motorola's Baton Rouge maintenance center, with a fully equipped service truck, performs daily preventive maintenance.

Gulf Closes Control Loop On Cat Cracker

The 60,000 b/d catalytic cracking unit of Gulf Oil Corp.'s Philadelphia refinery will soon be operating under the fully automatic control of an RW-300 Thompson Ramo Wooldridge computer.

It will be the first cat cracker to which "closed-loop" computer control will be applied: The 40,000 b/d cat cracker at Standard Oil Co. of California's El Segundo refinery is being monitored manually, with the help of an IBM 7090 computer located some 450 mi. away from the unit (PW—Dec.2'60,p49).

Gulf and TRW engineers have been working together on the application of computer control to refinery processing units since October, 1959. They analyzed the process, prepared the programming, and evaluated the necessary "hardware."

It is expected that computer control will increase the operating efficiency of the cat cracker up to 95% of its theoretical maximum.

For obvious reasons, Gulf is not willing to reveal its estimate of the current efficiency of its cat cracker. But it told PETROLEUM WEEK that the difference between manual control and the faster, more constant, and more precise application of automatic control raises efficiency to an extent that more than justifies, economically, the installation of the computer.

Two major variables will be used to monitor the process: reactor temperature and recycle ratio.

Initially, the system will have a total of about 150 analog and digital inputs to the computer, and provisions are being made for future expansion. Among the instruments supplying these data inputs will be an end-point analyzer and several process-stream analyzers.

The RW-300 is a transistorized digital computer, with built-in analog-to-digital conversion equipment.

TRW computers used in previous process control installations (PW—Mar.4'60,p52; Nov.4'60,p34) have established a reliability record of better than 99.5%.

Gulf expects to reap additional benefits from its installation, over and above those of better efficiency and increased yields, according to T. A. Dietz, general manager of the Philadelphia refinery.

Monsanto's New Plant Poses Puzzles

What Monsanto Chemical Co. will do with the huge quantity of petrochemical intermediates that will be produced at its new Chocolate Bayou (Tex.) plant is fairly obvious. But what routes the company will follow for their manufacture is still undisclosed.

The new plant will be connected with Monsanto's big petrochemical works at Texas City by three pipelines, which can be used for transportation in either direction.

The largest-volume product of the new project is ethylene, of which 500-million lb. will be made per year. Part of this will go to the Texas City polyethylene plant, and another part will be used to make ethylene oxide and ethylbenzene.

But the company has not said whether distillates or natural or refinery gas will be the raw material.

Propylene will also be produced, at an annual rate of 150-million lb. Monsanto does not say if it plans to enter the polypropylene field.

The second-largest-volume product will be benzene; a total of 42-million gal. of it is to be manufactured yearly. A high percentage of this benzene will be made in the ethylene plant, and the balance will come from the dealkylation of toluene—also produced in the ethylene plant.

Phenol will be made from benzene via the conventional cumene oxidation route, at a rate that should exceed 50-million lb. per year. And, as a byproduct, a substantial tonnage of acetone will be available.

Some 50-million lb. per year of naphthalene are also scheduled to be produced at Chocolate Bayou. Chemists are guessing that it may be made by a dealkylation process. Even this quantity, however, will not suffice to fill Monsanto's full needs for naphthalene.

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How to Estimate Refinery Pollutants

A method of determining the amount and type of air pollution that can be expected from a refinery has been developed from studies of the Los Angeles "smog" problem, according to a manual just published by the U.S. Dept. of Health, Education & Welfare (Public Health Service Publication No. 763).

This manual supplements, reviews, and discusses nine reports published in the Los Angeles County Air Pollution Control District, by several federal, state, and industrial agencies, which worked together for three years on what became known as the "Joint District, Federal & State Project for the Evaluation of Refinery Emissions."

There are two basic methods for approximating emissions from oil refineries: The first is a rough estimate of gross hydrocarbon emissions, based essentially on over-all refinery capacity.

Hydrocarbon emissions from refineries may range from 0.1% to 0.6% by weight of the crude throughput. (Both values refer to refineries with a substantially complete processing scheme. Smaller refineries, practicing only topping, treating, and blending, tend toward lower values.)

The high figure was obtained before application of the smog-control program in Los Angeles County, the low figure after application.

The second method, more precise, involves calculations based both on detailed information about the refinery operation, and on the Los Angeles refinery experience for specific emission sources.

This method allows an estimate of emissions from nearly every significant source in a refinery. Detailed process information is required for correct evaluation. The following emissions can be calculated:

- Sulfur oxides, based on sulfur content of the crude and the fuel oil, and on the amount of sulfuric acid used in processing.
- Various combustion emissions, from boilers, and cat cracking units (with and without electric precipitators).
- Hydrocarbon emissions. The emission from storage tanks and product loading operations accounted for about one-half of the total hydrocarbon emissions in Los Angeles. Methods and formulas for their calculation are given in the manual.

In addition, four types of equipment may leak hydrocarbons to the atmosphere: pumps, compressors, pipeline valves, and pressure relief valves.

The results of the Los Angeles studies, however, cannot be applied indiscriminately to any refinery in the country; many local factors must be taken into consideration, the manual warns.

Essentially, what must be considered is the type of crude run, the processes used, and the extent of control efforts in the refinery in question. Good judgment must be applied in evaluating the influence of each of these factors.

The method followed in the application of the Los Angeles results must be consistent with the degree of accuracy desired.

"It would be wasteful," the manual points out, "to make extensive calculations, and perhaps to run field tests, when only a rough estimate of emissions is required, and rash to expect an accurate, reliable result from a few simple calculations based on refinery capacity."

With Additives, 2+2 May Equal 5

How effective a mixture of lubricating oil additives will be in preventing wear of automotive parts can seldom be predicted, even when the effectiveness of each additive in the mixture is known.

W. S. Hoock and M. P. Kleinholz, of Sinclair Research Laboratories, gave many examples of the "synergistic" action of additives (that is, the combined action of several additives) when they are used together in a well-formulated lubricating oil, at last week's International Congress and Exposition of the Society of Automotive Engineers, in Detroit.

A judicious combination of additives can produce an oil having antiwear properties substantially better than most of the component additives when these are used alone in the base oil.

For example, the wear rate of piston rings, in a test engine, showed the following values, expressed in milligrams of wear per hour:

The base oil alone had a wear rate of 2.8. With a zinc dithiophosphate antioxidant, the wear rate was increased, oddly enough, to 2.97. A viscosity-index improver used alone in the base oil showed a wear rate of 1.86; an oiliness agent additive alone a rate of 1.36; and a barium sulfonate detergent used alone reduced the wear rate to as little as 0.57.

But the combined action of the four additives in the oil brought the rate of wear down to a value of 0.34.

Furthermore, the effectiveness of additives may vary when the engine design is modified, and the oil may have to be reformulated if excessive wear is to be prevented.

Changes in engine design affect motor oil development substantially, the Sinclair engineers pointed out.

They reported the case of piston wrist-pin failures in a newly designed automotive engine, with an oil that had given excellent wear-preventive results before the change.

Another case revealed excessive wear of a valve train shaft in a certain engine, when the conventional additives were present in the oil. When either the antioxidant or the oiliness agent were removed, excessive wear still occurred. But when both were omitted, a smooth shaft—without the typical worn-in grooves—resulted.

However, this did not leave a lubricant satisfactory for all its purposes, and certain substitute additives, or "synergists," had to be developed.

This was the experience that led to the development of Sinclair's nickel dithiophosphate wear-preventive additive (PW—Dec.4'59,p44).

The determination of wear rates of various engine parts may be difficult, and testing techniques must constantly be modernized, the Sinclair technicians said.

"As new wear problems arise in specific areas of an engine, new tests must be developed and different additives may be required," they warned.

To keep pace with automotive changes, joint research between engine technicians and petroleum laboratories is essential, Sinclair says. Otherwise, multiple complications may arise, because the lubricant supplier cannot provide an oil for one particular engine, but must consider all engines in operation, and must develop one oil to lubricate satisfactorily every make and model of engine.

What's New / IN PROCESSING AND PETROCHEMICALS

By processing 159,000 b/d of crude through its Delaware City still in late December, 1960, Tidewater Oil Co. says, it "apparently set a world-wide record."

It also demonstrated that a large crude still can be pushed significantly beyond its rated capacity: Tidewater's still is rated at 130,00 b/d.

•

The new 12,000 b/d alkylation unit at the Whiting refinery of Standard Oil Co. (Indiana) will go on stream this month.

Bechtel Corp., which built the unit, is completing the training of the personnel required to operate and maintain it, and is winding up a series of thorough tests.

The process will be controlled by gas chromatography, and provisions have been included in its design for eventual control by computer, like Whiting's No. 12 pipestill.

•

A 4,000 b/d delayed coking unit will be installed at the Enid (Okla.) plant of Champlin Oil & Refining Co.

Fluor Corp., Ltd. received the $1.5-million contract to convert an existing cracking unit into a coker.

•

Humble Oil & Refining Co.'s capacity for benzene and toluene will almost double when additional facilities at its Baytown (Tex.) refinery go into operation early next year.

The expansion will increase toluene annual extraction capacity at Baytown from 32-million to 55-million gal. A portion of the toluene will be used to produce benzene by dealkylation, by a process developed in Humble laboratories. Benzene production at Baytown will be increased from 30-million to 55-million gal. per year.

•

A 35-million cf/d natural gasoline plant is being built jointly by Shell Oil Co. and Arkansas Fuel Oil Corp. in North Ricon Field, Starr County, Tex. Fish Engineering Corp., Houston, is the contractor; completion is expected in July.

The plant has been designed to recover about 80% of the propane, and essentially all of the heavier hydrocarbons.

Recovery will include about 14,900 gal. of propane, 14,300 gal. of LPG, and 7,800 gal. of gasoline per day.

•

A plant for the manufacture of vinyl acetate monomer will be built for Reichhold Chemicals, Inc., in the Houston area.

It will use acetylene as its main raw material, and will have an initial capacity of 50-million bbl. per year.

In the cyclic hydrocarbons . . .

Will the '8' supplant the '6'?

Great potential for technical development is offered by the cyclic C_8 hydrocarbons just announced by Cities Service Co. (PW—Jan.13'60,p15).

No one knows yet how far they may go in replacing C_8 cyclic hydrocarbons for making plastics, fibers, plasticizers, and synthetic lubricants.

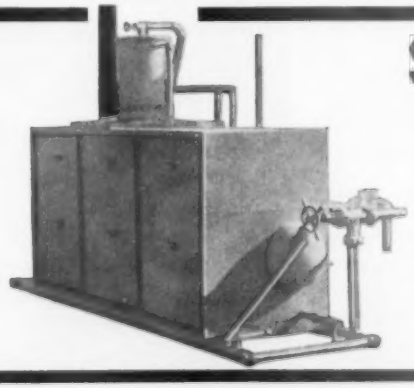
Cyclo-octadiene is the basic product, obtained by catalytic treatment of butadiene.

And by hydrogenation of cyclo-octadiene, cyclo-octene is made: it has only one double bond, and because of this, Cities Service says, oxidation reactions performed with cyclo-octene may be easier to control than when using cyclo-octadiene.

As for cyclo-octane, it is the basis of caprylolactam, used to make Nylon 8.

Nylon 8, developed in Germany, is said to have several advantages over Nylon 6 or 66, made with caprolactam. Among them:

- The monomer is not toxic, and the careful precautions that are necessary when making the conventional nylon need not be taken.
- Nylon 8 has much less tendency to absorb moisture and swell than Nylon 6. This makes it a better material for industrial parts, that must retain their shape regardless of environment.



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French Are Pushing Plans to Move Sahara

(A Report from PETROLEUM WEEK'S *Paris Bureau)*

PARIS—This spring, Sahara gas will reach Algeria's Mediterranean Coast—the first stage of a journey that, eventually, will take it throughout industrial Europe.

In April, production of the substantial Hassi R'Mel field will begin at the modest rate of 17.6-billion cu. ft. per year. The gas will be carried to customers in the industrialized areas on the Mediterranean Coast of Algeria.

But this first production will be minute compared to the ultimate potential of the Hassi R'Mel field.

Recoverable reserves have been estimated by the producers at at least 35.3-trillion cu. ft.

Thus, the producers in the field are pushing plans to tap it on a much larger scale, and this means finding markets across the Mediterranean Sea in Europe.

Hassi R'Mel's producers are S.N. Repal (51%) and Cie. Francaise des Petroles (Algerie) (49%). Nine other companies have been formed, mostly within the past year, to handle various aspects of the Hassi R'Mel development program. For their identity, ownership, and purpose, see the accompanying chart (right).

French plans to get Hassi R'Mel gas out of the Sahara and en route to Europe are moving at a brisk pace.

Accomplishments in 1960 included technical surveys of undersea pipeline routes, research on a methane tanker, blueprinting of a liquefaction plant, studies of the eventual market for piped and liquid gas, and construction of the pipeline to the Mediterranean Coast.

The French now plan to build a trans-Mediterranean pipeline to Europe with a capacity of 350-billion cu. ft. per year—the Btu. equivalent of 160,000 b/d of oil. Initial production will be from 210-billion to 250-billion cu. ft. a year; it will rise rapidly to full capacity in order to make the operation economic.

To find customers for this gas, the producers in the Hassi R'Mel field are making extensive surveys of the European market. All plans, including the pipeline route, must be based on the consumption pattern.

For the past six months, Semarel, a firm set up to study European markets for Sahara gas, has been working with the governments of France, Spain, Belgium, Germany, Holland, and Italy to determine what Europe's energy picture will be in 1966-67, when, it is expected, Hassi R'Mel gas will be ready to flow to the European market.

Prices of competing fuels and proposals for industrial expansion are getting special attention.

Industries that have shown the most interest in natural gas are city gas distribution, chemicals, electric power, steel, and metallurgy. Since the load factor for gas must be very regular, such industries as glass, cement, and ceramics, whose activities are concentrated in a few big plants and which use energy continually, are also good prospects.

On a country-by-country basis, the most interest in Hassi R'Mel gas has been shown in France, Italy, and Spain.

• **France**—The Economic Plan predicts that energy needs will at least double by 1975. Thus, in spite of opposition to gas by the nationalized coal mines, Semarel thinks Hassi R'Mel gas will provide a welcome addition to the energy supply by 1966-67.

• **Spain**—With big plans for industrial expansion in all sectors of the economy, both the government and private industry have shown keen interest in Hassi R'Mel gas.

• **Italy**—Italy will probably provide a good market. Such top industrial firms as Fiat and Montecatini have set up a company called Sosim, which wants to import Hassi R'Mel gas as energy for the industrialization of Sicily.

Another possible Italian market is the underdeveloped South.

In negotiating with Semarel, Sosim has offered to take 35.3-billion cu. ft. a year for Sicily alone, but Semarel has brushed aside the figure as "not sufficiently studied."

Except for city gas distributors, Hassi R'Mel gas is not expected to find big markets in West Germany, Belgium, or the Netherlands.

German and Belgian companies are more interested in being intermediaries than consumers. They have made offers to participate in constructing and financing the pipeline project.

While British interest in the gas is now limited to tanker-moved liquid methane, the extension of a continental pipeline to England has not been ruled out by Semarel and Setrel,

Who's Who in Sahara Gas

(Companies, Owners, Functions)

- **Sehr** (Soc. d'Exploitation d'Hassi R'Mel): SN Repal 51%. Cie. Francaise des Petroles d'Algerie (CFPA) 49%. Hassi R'Mel producer.
- **Comes** (Soc. Commerciale du Methane Saharienne): SN Repal 50%. CFPA 50%. Gas sales in Europe.
- **Segans** (Soc. d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara): SN Repal 35%. CFPA 35%. Bureau de Recherches de Petrole (BRP) 30%. Technical studies of underseas pipeline routes.
- **Sothra** (Soc. de Transport du Gaz d'Hassi R'Mel a Arzew): SN Repal 32.5%. CFPA 32.5%; Electricite et Gaz d'Algerie (EGA) 35%. Operator of Hassi R'Mel-Arzew trunk pipeline.
- **Setrel** (Soc. d'Etudes de Transport du Gaz d'Hassi R'Mel en Europe): Segans 50%. Gaz de France 50%. Coordination of two owner firms' studies of underseas pipeline routes to Europe.
- **Semarel**—(Soc. d'Etudes de Marches Europeens de Gaz de Hassi R'Mel Transporte par Canalisation): Comes 40%. Gaz de France 40%. BRP 20%. Market studies and negotiations of gas contracts in Europe.
- **Camel** (Cie. Algerienne du Methane Liquide): Conch 50%; SN Repal and CFPA 26%. Air Liquide and four French financial companies 24%. Construction of a liquefaction plant at Arzew and shipment of liquid methane to the United Kingdom.
- Comptoir de Vente en Algerie du Gaz Naturel d'Hassi R'Mel: EGA 50%. SN Repal 25%. CFPA 25%. Gas sales to Algerian customers.
- Soc. Methane Transport: Segans, Gaz de France, Air Liquide, French shipping companies and banks. Research on a French methane tanker.

Gas to Europe

which was formed to study possible pipeline routes.

Negotiations between Comes, a firm handling European sales of gas; Conch International Methane, Ltd., (composed of Royal Dutch/Shell, Continental Oil Co., and Union Stockyard & Transit Co.); and the British Gas Council, for the purchase of 70.6-million cu. ft. per year of liquefied methane, are now deadlocked over price. But when agreement is reached, the Hassi R'Mel producers, Conch, and French financial interests will formally set up a new firm, Camel, to build a liquefaction plant at Arzew, Algeria.

The liquefied gas will be shipped by methane tanker to Great Britain for use by local gas boards.

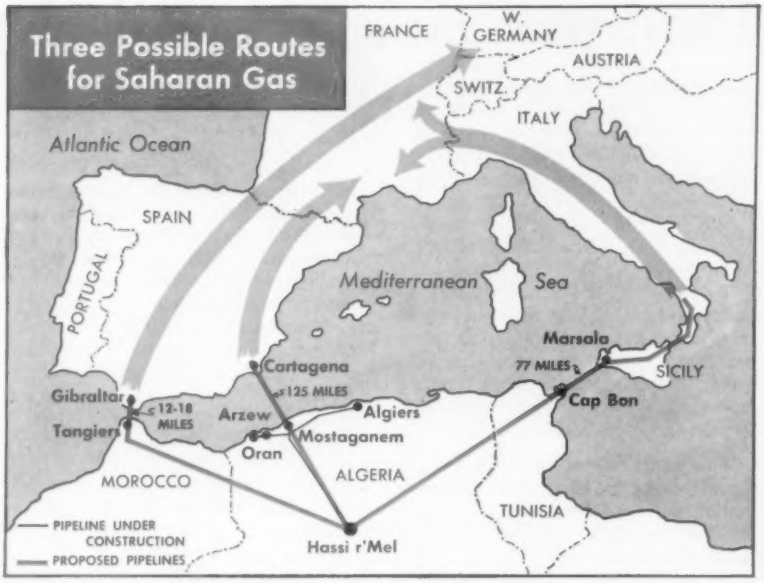
Eventually, the plant's capacity could be raised to permit liquefaction of gas for the French market.

No price has yet been set for the gas to be transported by pipeline to Europe—but it won't be cheap, just competitive with other fuels, Semarel has been telling prospective customers.

As a matter of fact, Semarel hasn't decided whether the price will be uniform regardless of geographical location of the client, or if it will rise in proportion to distance from the field. The latter policy is more likely to be adopted.

It is now hoped that Hassi R'Mel gas will sell for about the same price, on an energy equivalent basis, as oil and coal, for certain uses, such as raw materials for the chemical industry. Semarel is banking on the fact that, given an equal price, customers will prefer to take gas.

A TECHNICIAN prepares for a sea-bottom study of a possible pipeline route.



The French would like to make the pipeline an international project, and this idea is getting support from foreign companies, especially U.S. firms.

Offers from U.S. companies to supply materials and to build and finance the pipeline have been piling up on the desks of the producing firms for months. Preliminary negotiations may start soon.

The French would also like participation from countries through which the pipeline will run.

They think the line should be financed and operated by an international group, including the two producing companies, the French government, Gaz de France, and industrialists in the consuming nations.

While the big scheme is being worked out, production on a small scale will start in April, when the pipeline to the Mediterranean will be ready for operation.

This line consists of a 24-in. trunkline running 264-mi. from Hassi R'Mel to Relizane. From there, a 20-in. line will run 56-mi. to Arzew. One 16-in. branch will connect Relizane to Algiers 186 mi. away. A second, 14 in. in diameter, will run 25 mi. from Arzew to Oran.

The trunkline from Hassi R'Mel to Arzew belongs to Sothra, which was set up to operate it. The two branches are the property of Electricite & Gaz d'Algerie.

There are two sets of prices for Hassi R'Mel gas to be sold in Algeria.

Ordinary customers will pay 27.5¢ per Mcf. Companies that set up new industries will get a special low rate of 18.2¢ to 20.8¢ per Mcf. Comparative prices for Lacq gas in France run from 63.5¢ to 75.3¢ per Mcf.

Three undersea routes for the European pipeline are under study (map). Surveys have shown no reason to rule out any one of them so far.

The final decision, to be made by Setrel, will be based on economic factors, such as the location of the big consumers, and on the technical advantages of one route over another.

The three routes are:

- **The Gibraltar Route.** This would involve only a 12-18-mi. sea crossing at the Straits of Gibraltar. But the land route would be longer.
- **The Mostaganem-Cartagena Route.** An undersea line connecting the Algerian city with the Spanish port would have to be 125 mi. long. Also, the pipe would have to be laid under 8,860 ft. of water at the deepest spot, compared to 1,476-ft. maximum depth for the Gibraltar crossing. However, the total length of the line —land and sea—would be less.
- **The Cap Bon-Sicily Route.** Under this plan, the pipe would run 77 mi. undersea from Cap Bon, Tunisia, to Marsala, Sicily, plus a short additional segment to mainland Italy. Construction of this line would depend upon Italy and Sicily becoming major customers.

Phillips Plans New Oil Export Route

CARACAS—The Phillips Petroleum group will open a new export route for Venezuelan oil—via the Orinoco River to the Atlantic—as part of its plans to start producing in the east.

Phillips and its seven partners in Venezuela are already in production in the west, in Lake Maracaibo.

In the east, the group expects to start production late this year at its new Morichal field, under development in southern Monagas. The field yields heavy asphaltic crude ranging between 9- and 14-gravity, from depths between 3,000 and 4,000 ft.

Phillips is awaiting final official approval to build a 24-in. pipeline outlet from its Morichal field to a loading terminal on the Orinoco, near Puerto Ordaz.

In the meantime, Phillips is taking delivery of pipe for the 45-mi. line, which will have initial capacity of about 25,000 b/d. It will run across flat plain, crossing under the broad river to its terminal.

While Phillips has not released detailed information on its plans, it is also studying a refinery for the Puerto Ordaz area.

It would be built in conjunction with a projected plant to make metallurgical coke from the heavy Morichal crude. The coke would be used in furnaces of a steel plant being built by the government.

The Phillips project will carry oil industry operations southward across the Orinoco for the first time—and into the heart of an iron-steel-aluminum-hydroelectric complex taking shape near the junction of the Orinoco and Caroni Rivers.

Morichal is at the southern edge of eastern Venezuela's oil development area. But up to now, the Orinoco has not been used as an oil export outlet.

Creole Petroleum, for example, two years ago completed a 92-mi., 30-in. line running northward from the Temblador field to Caripito—instead of building a much shorter line southward to the Orinoco.

The Orinoco route is now feasible, however, because the river has been dredged to a minimum depth of 34 ft. to accommodate seagoing ore carriers over the 160-mi. waterway between Puerto Ordaz and the Atlantic Ocean.

Meanwhile, Phillips is completing a 31-well development program at Morichal, in the northeast part of the group's southern Monagas Block 9, a 24,700-acre tract offsetting Creole's Jobo field.

Phillips and its partners acquired the block in 1957 for a bonus of $11.4-million. Six wells were drilled on it in 1958.

The first-stage development program of 31 additional wells, which is now being completed, covers about 7% of the tract.

Recoverable reserves of the entire block are estimated at 600-million bbl. by the group.

The Morichal acreage, and other leases offsetting the Jobo heavy-crude field, are the only "new" concessions in eastern Venezuela that have yielded oil.

Pan American has nine producers shut in on a tract offsetting Jobo, but has no plans at present for developing the lease.

Phillips has a 55.75% interest in the Morichal tract. Its partners are: Sunray Mid-Continent (17.27%); Ashland Oil & Refining (10.79%); Kerr-McGee Oil Industries (5.40%); El Paso Natural Gas and Western Natural Gas (6.47% jointly); and Canadian Atlantic and Pacific Petroleums (4.32% jointly).

Construction of a terminal, refinery, and coke plant near Puerto Ordaz would give the Phillips group a role in the bright industrial future of Venezuela's Guayana region.

What's New / AROUND THE WORLD

GUATEMALA—Ohio Oil will soon spud its third Guatemalan wildcat—this one in the extreme northwest, near the Mexican border. The La Pita site is in the Lago Reposta region.

As operator for its joint account with Continental and Amerada, Ohio previously drilled two unsuccessful tests to depths below 10,000 ft.

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ARGENTINA—Cabot Corp., Boston, will go ahead with installation of its proposed $4-million carbon black plant this year under a final agreement signed with the government last week.

The plant will produce an estimated 13,000 tons annually (including about 4,000 tons for export to neighboring countries) at Campana, north of Buenos Aires. Plans for this unit were separate from those for a more comprehensive petrochemical complex that were recently withdrawn by a Cabot affiliate, Texas Butadiene & Chemical International (PW—Jan. 6'61,p41).

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ECUADOR—Mobil has launched an Ecuadorian marketing affiliate to sell lubes and related products.

Mobil Oil Co. del Ecuador is headquartered at Guayaquil. Previously, Mobil marketed through a distributor here.

•

WEST GERMANY—The growth rate in domestic crude output dropped in 1960 to 8.4% over 1959, compared with increases of 11% to 15% in the preceding three years. Production for the year totaled just over 5½-million tons, or roughly 110,000 b/d, according to preliminary industry statistics.

•

EGYPT—Caltex and Italy's ENI group have each agreed to take about 400,000 tons of Egypt's 22-gravity Belayim crude this year.

At the same time, Cairo will import 2¾-million tons of other crudes, with Caltex supplying 1¼-million tons of Arabian, and the Soviet oil export agency 1½-million tons from the Black Sea.

•

COLOMBIA—Construction of Colombia's first gas pipeline—owned 50% by Texaco and Mobil—has begun.

By next fall, the 10-in., 132-mi. line will carry 35-million cf/d of gas from the Cicuco field to Barranquilla. Mobil and Texaco each holds a 25%

The area has tremendous industrial potential because of its combination of natural resources. It already has several major industrial installations.

Up until 1958, Phillips by itself was a small producer in Venezuela, averaging 12,000 b/d in that year. Then it found oil on two new Lake Maracaibo concessions acquired with its new partners. Phillips holds 45% and 55% interests in these, and is the operator. Production in 1960 from tracts on which it is operator averaged as high as 60,000 b/d. It also has a small 3,500 b/d refinery and wax plant at San Roque in eastern Venezuela.

Perez on Russian Oil

CARACAS—Oil Minister Juan Perez Alfonzo says Russia does not like to export oil: It only exports it out of economic or political necessity.

Otherwise, he says, Russia would consume its oil internally.

This was the reply the Venezuelan minister made at a press conference last week when asked if the Soviet Union was interested in joining OPEC (the Organization of Petroleum Exporting Countries), which is meeting in Caracas this week.

Three-Company U.S. Group Set For Trinidad Offshore Venture

Pan American International, Sun Oil, and Pure Oil will move into Trinidad exploration this spring in a joint offshore venture.

The three companies will share equally in a new 2-million-acre marine exploration license under an agreement signed with the Trinidad government last week. Pan American will be the operator (PW—Dec.23 '60,p65).

The group's Trinidad acreage lies off the east and southeast coasts, extending seaward into the Atlantic from the 3-mi. limit of marine licenses held by a Standard of California subsidiary.

Although some preliminary offshore work has been done off Trinidad's east coast, offshore drilling to date has been confined to the west coast, with production already established in the Gulf of Paria.

The group is getting its exploration rights for a maximum of 15 years, including an initial five-year period and two permissible five-year extensions. The license would be automatically convertible into a mining (development) lease once a commercial discovery is established.

Minimum annual investment obligations are spelled out on a per-acre basis, and will amount to about $500,000 for the first year.

Exploration is expected to start this spring with marine seismic work—weather permitting.

Though full terms have not yet been disclosed, the U.S. group is understood to have agreed to a 50-50 split of net profits, with 12½% royalty included in the government's 50%.

According to indications available last week, these terms would conform with new 50-50 legislation that the Trinidad government is reported in process of enacting.

For each of the three U.S. companies, the Trinidad venture represents an extension into the Caribbean area of exploration interests acquired in Venezuela in 1956-57.

On its own, Pan American holds an offshore tract on Venezuela's side of the Gulf of Paria, where it suspended operations a year ago after one wildcat. Elsewhere, Sun and Pan American share some rights in Monagas and Lake Maracaibo. Pure Oil is also represented in the Lake.

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interest in the project. The rest is held by 120 Colombian investors.

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ISRAEL—Three petrochemical plants costing $17½-million and a $500,000 lube blending plant will be set up near the state-controlled Haifa refinery.

Foreign and Israeli interests will build the petrochemical units under an agreement announced by the Minister of Industry. No details have been disclosed. The blending plant will be built by Paz, Ltd., the British-owned company that bought out Shell's former marketing interests in Israel.

•

ECUADOR—European oil companies are showing interest in exploration in Ecuador, according to Vicente Levi Castillo, Director General of Mines & Hydrocarbons.

Belgian, German, and French companies, he said, are interested in a potential oil area recently outlined by Austrian geologist Dr. V. S. Paulik.

The area is situated inland in Ecuador's subtropical zone, stretching southwest from Esmeraldas province to the Gulf of Guayaquil.

•

Correction

VENEZUELA—Mobil reports the correct acreage in its Lake Maracaibo farmout from Creole is 11,416 acres (4,620 hectares), and not the much larger figure it inadvertently released earlier (PW—Dec.23'60,p32).

Cities Service Gets Argentine Stake

ARGENTINA—Cities Service has taken the first step toward entrance into exploration here by acquiring a 50% share in the operations of a Tulsa independent.

The company announced last week that a new wholly owned subsidiary, Cities Service Production Corp., had acquired the half interest from White Eagle International, Inc.

At present, the independent firm's operations involve only a waterflood project for a private Argentine producer, Astra Cia.

White Eagle will continue as operator of the project, with technical aid from Cities Service.

The two companies are interested in acquiring exploration contracts here when new rights are offered, a company spokesman said last week. Cities Service at present is conducting basic geological work in Argentina. It is also active as a marketer.

Petrochemical Line System Is Planned

SunOlin Chemical Co. is being lured by rich chemical markets to build a multiple petrochemical-pipeline system across the Delaware River, from Claymont, Del., to Penns Grove, N.J.

While companies are showing a keener interest lately in building chemical lines, they caution that long-term markets are necessary to guarantee the investment. The main risk in building a petrochemical pipeline, according to one expert, is that—unlike an ordinary products line—it usually serves only one customer whose operation could change before the line is paid off.

SunOlin may have a solution to this problem in its multiline plan.

SunOlin hopes to tie in with plants in southern New Jersey that will buy the chemicals produced by itself and by Sun Oil Co., which has a refinery at nearby Marcus Hook, Pa.

The tie-ins will be made by constructing lines from the crossing terminus, at Penns Grove, to customer plants. "Building the lines is SunOlin's way of saying we can put ethylene or other chemicals right at your doorstep," says a spokesman.

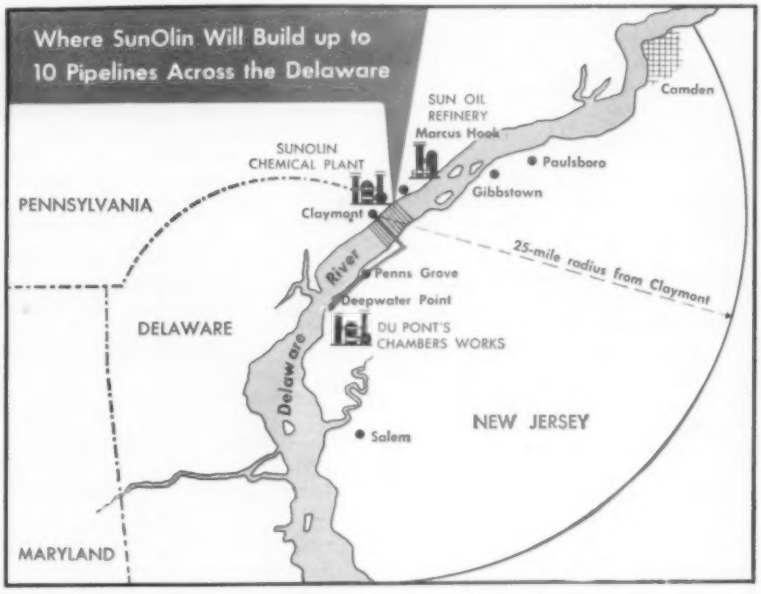
The bank of lines—some of which will be completed by the end of the year—will be the first venture into petrochemical pipelining by SunOlin or Sun Oil, says James I. Harper, president of the former. Sun Oil owns a half interest in the chemical company. The other half is owned by Olin Mathieson Chemical Corp.

Tentative plans call for construction of as many as ten lines to carry such chemicals as ethylene, ethylene oxide, hydrogen, and propylene, and possibly others. "We are tentatively figuring on ten lines as a maximum," explains Harper, "but we don't know how many will be built initially."

Harper adds: "We'll put down more lines than we see a direct need for. It's comparatively inexpensive to put another line in when the ditch is open but expensive to reopen it later."

The lines will be buried under rock fill in a 25-ft.-deep ditch in the floor of the Delaware River.

Reason for the outsize depth of the ditch and the rock fill is that the river is an anchorage for big ships at the crossing, and extra precautions will be necessary to protect the lines. Width of the Delaware at the crossing is 6,000 ft., and depth of the channel at midriver is 40 ft.



Harper says that SunOlin is thinking nominally of 8-in. lines for the reason that it could later pull special 6-in. alloy lines through them.

Each line will be segregated to carry a separate chemical. A source says that toluene and benzene may be among the chemicals that will be shipped later.

Cost of the ten lines across the river and land laterals now planned will be $2-million, Harper says.

The ethylene will come from a $20-million plant being built by SunOlin at Claymont, which is slated for completion by year's end.

SunOlin will also supply hydrogen. Propylene—if and when a market is found for it—will come from the Sun Oil refinery.

SunOlin thus far has landed at least one customer—E. I. du Pont de Nemours & Co.—in a radial area extending about 25 mi. from Claymont that it hopes to serve through extensions of its lines (map).

A spokesman for Du Pont discloses that a line will be extended to carry ethylene to the company's Chambers Works, near Deepwater Point, N.J., where tetraethyl lead, tetramethyl lead, and tetramix are made.

To date, the identities of other customers who might be tied into the pipeline system haven't been revealed. Says Harper, "We are not free at this time to disclose the names of the companies we're negotiating with. We anticipate a number of other petrochemicals—besides ethylene and ethylene oxide—being shipped through our lines, but sales agreements have not been consummated as yet."

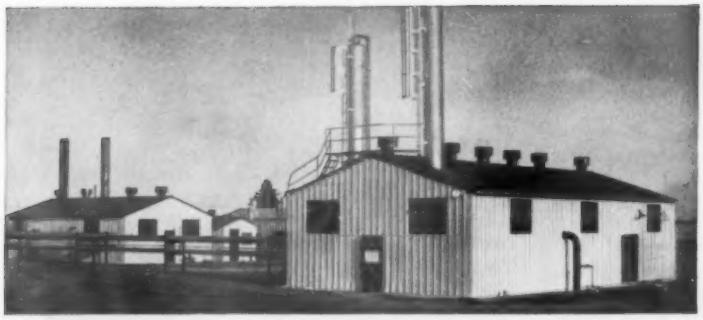
However, a reliable source says that Monsanto Chemical Co. and Shell Chemical Corp., both of which have announced plans to build petrochemical plants in the territory mapped out by SunOlin, are good bets as potential customers (PW—Sep.9'60,p43, PW—Nov.4'60,p37). Just what chemicals the two companies would take was not disclosed.

In addition to these two plants in the planning stage, several other plants already exist in the area, though they haven't been linked to SunOlin's plans.

Hercules Powder Co. has a plant at Gibbstown, N.J., and Du Pont has a chemical plant there, plus one to make explosives near Camden, and a paint plant near Philadelphia.

Main reason for building the pipelines is that they are the cheapest way of moving petrochemicals across the river, according to Harper.

While Harper hasn't released any thoughput figures, he says pipelines are economical for petrochemicals only if large quantities are shipped.



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See Sweet's Industrial Construction File—Section 8-B

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Pipelines Span Danube

Twelve pipelines—ten for crude and two for products—cross the Danube River, near Vienna, on this suspension bridge. A feature of the structure is that it can withstand gales up to 150 mph., because its pylons are situated near each bank, with their cables tied into a knot at midstream. The lines move crude from eastern Austrian fields to the new Schwechat refinery, and products from the refinery.

What's New / IN TRANSPORTATION

Transcontinental Gas Pipe Line Corp. plans to spend $100-million this year on new facilities—chiefly mainline loops—that will boost its daily delivery capacity by 234-million cu. ft.

The company says it is seeking Federal Power Commission authority to build about 500 mi. of loops in Texas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Pennsylvania and New Jersey. The planned loops will bring to the halfway mark construction of a complete third line from the Gulf Coast to New York.

The company's 1961 program also calls for installation of two new compressor stations and increasing the power of existing stations, plus enlarging storage capacity.

•

Four pipeline companies were asked by the British Columbian government to submit bids by last Sunday to build a $50-million crude line to run from the Peace River area to Vancouver.

The companies are Westcoast Transmission Co., Ltd., Trans Mountain Oil Pipe Line Co., Trans-Prairie Pipelines, Ltd., and Peace River Oil Pipe Line Co., Ltd.

The line would be 200 mi. to 250 mi. long. Premier W. A. C. Bennett says he hopes to see it completed before the end of the year.

He adds that construction of the line should touch off a $100-million drilling program in the area (PW—Jan.13'61,p23).

•

Transportation revenues of 68 major oil pipeline companies totaled $177,427,062 in the third quarter of last year, representing a 1.6% increase over the same period in 1959.

The figure was contained in a report of the Interstate Commerce Commission covering companies having annual operating revenues of over $500,000.

Service Pipe Line Co. reported the highest revenues for the quarter—$16,723,186—a 21.1% boost over 1959.

Next was Magnolia Pipe Line Co. with revenues of $11,590,524, which represent an 18.6% increase over last year.

•

A 53-mi. double flexible pipeline will be built for Magna Pipe Line Co. under the Georgia Strait to transport 45-million cf/d of gas from British Columbia to Vancouver.

The underwater line will be constructed by British Insulated Callender's Cables, Ltd., London, which says it will be the longest flexible marine pipeline in the world.

The reason for using a cable-type line is its ease of installation, says British Insulated.

Diameter of the lines will be 7½ in.

Westcoast Transmission Co., Ltd., will supply gas to the lines.

•

Yellowstone Pipe Line Co. has completed its 82-mi. products line from Helena to Great Falls, Mont.

The 6-in. line connects at Helena with Yellowstone's main pipeline from Billings to Spokane (PW—Apr.22'60, p78).

Continental Oil Co., one of the owners of Yellowstone, is finishing a terminal at Great Falls, which will receive gasoline, heating and diesel oils, and jet fuel through the line. From the depot a jet-fuel line runs to Malmstrom Air Force Base.

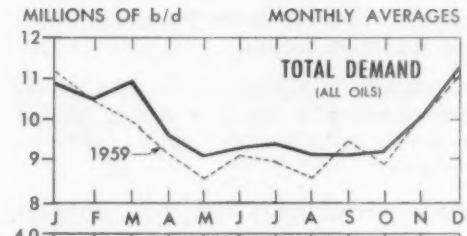
•

Another company—Standard Pipeprotection, Inc., St. Louis—has been licensed by Republic Steel Corp. to use its X-Tru-Coat, a polyethylene film, to coat pipe (PW—Jan.6'61, p38).

Standard Pipeprotection announces it will build a new plant in the St. Louis area, which will be used exclusively for application of the plastic coating to pipe.

PETROLEUM WEEK'S

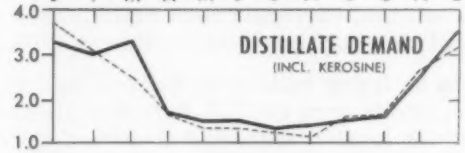
Fingertip Figures



Figures for period ended Jan. 13, except as noted

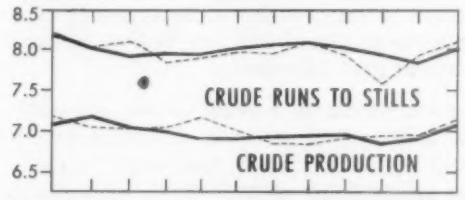
TOTAL DEMAND

Latest 4-week average	11.486
Year ago	10.617



DISTILLATE DEMAND

Latest 4-week average	3.768
Year ago	3.128

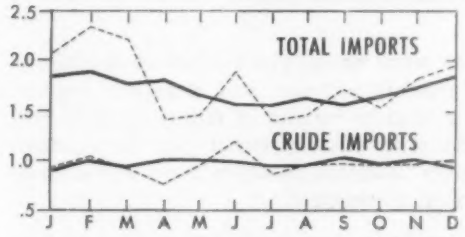


RUNS TO STILLS

Latest week	8.342
Previous week	8.167
Year ago	8.302

CRUDE PRODUCTION

Latest week	7.151
Previous week	7.165
Year ago	7.146

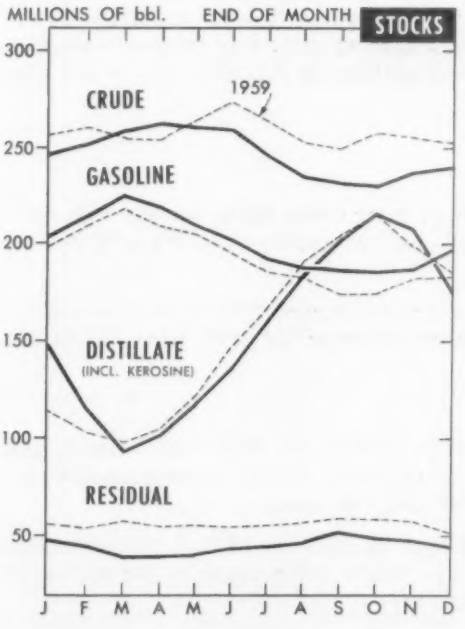


TOTAL IMPORTS

Latest week	2.140
Previous week	1.917
Year ago	1.716

CRUDE IMPORTS

Latest week	1.123
Previous week	1.184
Year ago	.960



CRUDE STOCKS

Week-ended Jan. 7	237.6
Previous week	238.7
Year ago	248.9

GASOLINE

Latest week	200.3
Previous week	199.9
Year ago	196.5

DISTILLATES

Latest week	157.1
Previous week	166.1
Year ago	165.1

RESIDUAL

Latest week	42.3
Previous week	45.0
Year ago	51.3

Barring a minor miracle, processors will start the "motoring season" next April with ballooning gasoline stocks of close to 235-million bbl., an all-time peak. That would be 12-million bbl. more than last year's surplus supply.

Motor fuel inventories at the beginning of 1961 were 196-million bbl. compared with 187-million a year earlier. So refiners already have a 9-million-bbl. head start, and there are three full months to go before the period of peak gasoline demand begins.

It's likely that more than 36-million bbl. of motor fuel will go into storage tanks between now and Mar. 31.

Conservative estimates place runs to stills at 8.2-million b/d for the first quarter of this year. The gasoline yield, including blended gas liquids, can be expected to average 51%.

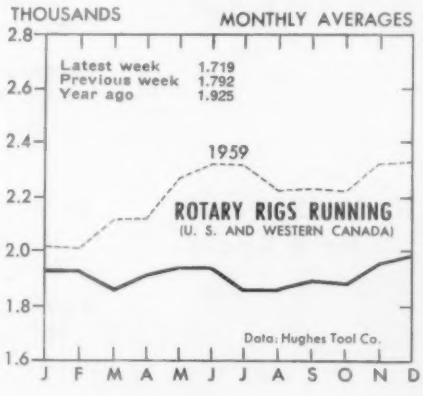
On this basis, gasoline production for the first quarter of 1961 will average 4.2-million b/d, surpassing anticipated demand by 400,000 b/d. That will go to increase already unwieldy inventories.

Refinery runs will be up 117,000 b/d over the first quarter of 1960. But gasoline demand will rise a skimpy 56,000 b/d, estimates indicate.

Demand for motor fuel for the first three months is expected to average 3.8-million b/d, compared with 3,744,000 b/d during the like period last year.

What has saved the day so far is the fact that there's plenty of clean storage on hand for gasoline.

The heavy drawdown in light heating oil stocks this winter has made more storage space available for motor fuel. Refiners so far have not been forced to push gasoline into secondary storage. But from the way the supply-demand situation looks now, the softening of gasoline prices may only have been postponed.



The Market Trend

Markets Off to a Strong Start in 1961

The markets are active and fairly strong. Five major East Coast marketers found themselves short of No. 2 fuel last week. They shopped at the Gulf, and pretty much picked it clean for January loading. In all, they bought eight cargoes—nearly a million barrels.

The tanker market is boiling up, too. In a single week, 22 U.S.-flag vessels were fixed for prompt loadings—that's nearly a record for one week's chartering. Owners are now asking USMC+40% and +45% for clean ships in position for next month.

Foreign-flag chartering just about went crazy last week, although the rates didn't move much. In one week, 62 vessels were chartered for late January and February liftings in the Caribbean and the Persian Gulf.

In the U.S., oil prices seem to be faring quite a bit better than the general list of commodities. Latest figures from the U.S. Bureau of Labor statistics show declines in prices for lumber, textiles, and quite a few metals. On the other hand, oil products are well above their levels of a year ago. In fact, BLS cites petroleum as one of the few nonagricultural commodities to post good gains in the past 12 months.

Granted, many of the oil price advances nowadays are seasonal. Conoco added 0.5¢ a gal. to its No. 2 and diesel prices in six Rocky Mountain states. Sohio upped light fuel oils 0.1¢ to 0.5¢ last week in Ohio. Esso Standard raised its propane prices 0.25¢ at New York harbor and Baton Rouge.

And there still are quite a few weak spots. The 0.25¢ drop in Chicago heating oils didn't look too good. Gasoline at the Gulf is getting touchy, and will turn soft if refiners step up runs instead of changing yield patterns. Retail price wars plague much of Texas. Kansas City pump prices dropped 5¢ a gal. last week. Many Midwest resellers have some spare product they would like to move at a discount.

But all in all, the markets seem to be on a much firmer base than at this time last year. A buyer at the Gulf couldn't cover a 50,000-bbl. requirement at 0.75¢ discount. The brightest spot: Los Angeles wholesale gasoline prices took an off-seasonal upturn, up 0.3¢ for regular and 0.5¢ for premium.

A Lube Cargo For Export:

You don't see many full cargoes of lubes these days, but one was fixed last week to load at the Gulf at the end of February. It's a 16,000-ton cargo destined for Australia.

Lubes seem to be in good demand right now, and cylinder stock is strong. Last week a Pennsylvania refiner advanced his price from 24¢ to 25¢ a gal.

Mobil Wins A No. 6 Award:

Mobil Oil Lebanon won a big utility contract last week that formerly was enjoyed by the Russians. Mobil bagged the Beirut powerplant business, which may run to nearly 700,000 bbl. this year.

Mobil's price for No. 6 fuel, delivered by rail, was 53.42 Lebanese pounds per ton, or about $2.61 a bbl. The supply will come from the company's partly owned refinery at Sidon.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of January 16

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....12.25-13.25
- Gasoline, 92 oct reg....11.25-11.5
- **Kerosine....9.75↑-10.25↑**
- **Heating oil, No. 2....9↑-9.25**
- **Gas oil, 48-52, d.i....9.25↑**
- **Fuel oil, bunker "C"....$2.30-2.50↑**

Caribbean, cargoes
- Avgas, Grade 100/130....14.75
- Gasoline, 93 oct research prem....11
- Gasoline, 87 oct research reg....9.875-10
- Gasoline, 80 oct research....9.125-9.25
- Gasoline, 70-72 oct motor method....9
- Kerosine....9.5
- Heating oil, No. 2....8.375
- Gas oil, 48-52 d.i....8.625
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- Kerosine....10.9-11.15
- Heating oil, No. 2....9.9-10.15
- Fuel oil, No. 6....$2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg....12.5-13.25
- Kerosine....11-11.125
- Heating oil, No. 2....9.5-9.75
- Fuel oil, No. 6....$1.80-1.90

Chicago, bulk
- Gasoline, 92 oct reg....12.625
- **Heating Oil, No. 2....9.75↓-11.35**
- Fuel oil, No. 6 high sulfur....7.65

Los Angeles, rack
- **Gasoline, 88 oct reg....11.3↑-12.65**
- Diesel fuel, PS 200....7.75-11.25
- Light fuel, PS 300....$2.90
- Heavy fuel, PS 400....$2.05-2.45

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....4.5-5
- **Propane, Baton Rouge....5.625-5.875↑***

Pennsylvania Lubes
- Bright stock, 25 p.t....25
- 200 vis. neutral, 25 p.t....28

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....26-27
- Neutral, solvent, 200-210 vis....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....26-27
- Neutral, solvent, 200 vis....23-24

**Effective Jan. 12*

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130....15.5
- Gasoline, 79 oct research....9
- Kerosine....9.625
- Gas oil, 48 d.i. minimum....9

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9....$2.69-2.97
- North Dakota, 36.0-36.9....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N.M., inter., 36.0-36.9....2.93
  - West Texas, N.M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.05-3.25
  - Mirando, 28.0-28.9....2.96-3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....4.80
- California, Signal Hill, 21.0-21.9....2.33†
- North Louisiana-Arkansas, 36.0-36.9....2.72-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.)....$2.38
- Leduc-Woodbend (Alta.)....2.53
- Redwater (Alta.)....2.42
- Steelman A (Sask.)....2.425
- Virden (Man.)....2.285

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat, La Salina....1.85
- Lagomar, 31-31.9, Cardon....2.55
- Lagunillas Heavy, flat, La Salina....2.07

†Differential per deg. of grav. varies

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.80
- Safaniya, 27.0-27.9, Ras Tanura....1.47
- Iran, 34.0-34.9, Bandar Mashur....1.78
- Iran, 34.0-34.9, Abadan....1.73
- Iraq, 35.0-35.9, Fao....1.72
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.59
- Qatar, 41.0-41.9, Umm Said....1.95
- N. Zone, Burghan, 23.5-24.4, Mina Saud....1.48
- N. Zone, Ratawi, 23.5-24.4, Mina Saud....1.41
- N. Zone, Eocene, 16.5-17.4, Mina Saud....1.28

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon....$2.17
- Iraq, 36.0-36.9, Tripoli, Banias....2.21

North Africa, Phillipeville, Algeria
- Hassi Messaoud, 48 and above....Withdrawn

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- U.S. Gulf-New York, clean....(USMC+35%) $3.85
- U.S. Gulf-New York, dirty....(USMC+20%) $3.42
- **NWI-USNH, dirty....(USMC—42½%) $1.58↓**
- NWI-UK/Cont., dirty....(Scale+30%) 22/11*
- **Pers. Gulf-UK/Cont., dirty (Scale—42½%) 34/5*↓**
- Persian Gulf-USNH, dirty....(USMC—42½%) $6.84

**Sterling*

Why Mobil Reshuffled Its Top Staff

A behind-the-scenes look into the strategy that created a new planning post on the top rung of Mobil's New York staff and killed the job of general manager of marketing.

The pressure on oil marketers today in trying to adjust to the rapid changes in market conditions has forced another reorganization on the men who sell the products of Mobil Oil Co.

It comes just two years after Mobil assimilated its former subsidiaries, General Petroleum Corp. and Magnolia Petroleum Co., to form a single coast-to-coast marketing unit.

This time the reorganization is confined to the men in high positions—those who guide and plan the company's 45-state operation from their headquarters in New York.

But the move will probably have just as much impact on the way Mobil emerges from the intense competition of the 1960s as all the previous reshufflings.

Through this recent change, Mobil gives a structural basis to its new marketing philosophy: It now splits strategy into an "annual plan" and long-range objectives, and delegates their responsibility to two different departments.

The new look to Mobil's staff stems from an audit of the company that was taken during 1960.

Through this study, Vern Bellman, Mobil's vice-president, found he needed "to strengthen the organizational provision for studying new and alternative methods of marketing in the future."

At the same time, he saw that he had to reduce "the enormous work load" of his general sales manager, the man who must assume full responsibility for executing Mobil's "annual plan."

Until the staff reorganization, both planning and execution were under the direction of Baxter F. Ball, the general sales manager.

Ball, and his resale marketing manager, H. J. Peckheiser, could scarcely get away from their desks because of the pressure of these two jobs. For men who should be in the field, directing their subordinates, this work load would inevitably create inefficiencies.

Furthermore, Mobil has wanted to give greater emphasis to heating oil, adding additional burdens on the general sales manager: A new unit had been planned to report to him, through the resale manager.

To meet the challenge of long-range planning, Mobil has created a new department—market development.

As Bellman describes it, this is the "planning and problem-solving arm of marketing." It will reach into the future to search for solutions that have broad implications.

In so doing, the department relieves the general sales manager of long-range planning, and lets him concentrate solely on the "annual plan," the tactics that are to win a profit for Mobil over a 12-month period.

The man who has been chosen to direct the top planning wing is G. A. Klaffky, a marketer with considerable line marketing experience coupled with the recent planning experience he gained as Mobil's resale programs manager.

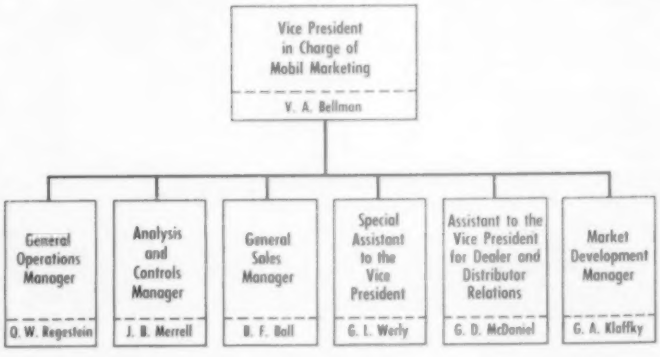
Klaffky has already emersed himself in his job. As director of Mobil's newly formed Design Test Center, he has recently returned from a demonstration of some of the new ideas that may find their way into Mobil's future service stations.

In addition, Klaffky has assumed the job of coordinating Mobil's study of market penetration. For many months, Mobil has been working with an outside research agency to determine the optimum market share required in the markets it serves.

Klaffky's other work will be on "specific problems," as Bellman says, "where there is promise that the solution can be applied generally or repeatedly. For example," he says, "the department may undertake a study of consignee agents in a particular geographic area. The ideal solution should not so much be applicable to the particular area, as to consignee agents generally."

Two specialized functions that the market development department will not study are pricing and advertising.

"Both of these are functions where we considered it impractical to split longer term thinking and planning


Vice President in Charge of Mobil Marketing
V. A. Bellman
General Operations Manager
O. W. Regestein
Analysis and Controls Manager
J. B. Merrell
General Sales Manager
B. F. Ball
Special Assistant to the Vice President
G. L. Werly
Assistant to the Vice President for Dealer and Distributor Relations
G. D. McDaniel
Market Development Manager
G. A. Klaffky

Here's How Mobil's Executives Line Up

Two new names have emerged in Mobil's marketing staff: They are G. A. Klaffky, who will direct the newly formed planning wing, the market development department, and J. B. Merrell, who steps into the "checks and balances" spot at analysis and controls. G. L. Werly moves out of the eliminated general manager's office to become special assistant. The three other posts are unchanged.

from short-term execution," Bellman explains.

Consequently, both pricing and advertising will be the responsibility of the general sales manager.

Another major change in Mobil's marketing headquarters is the elimination of the job of general manager.

This office belonged to G. L. Werly, who shouldered much of top marketing responsibilities for the vice-president, while he was occupied with corporate affairs during the months of reorganization.

When Bellman returned to give full time to marketing he found considerable duplication between his job and Werly's. "After careful consideration, we have decided to discontinue the position of general manager of marketing," Bellman says.

Werly agreed to take a high level staff position—as special assistant to the vice-president—where he'll direct special marketing projects "for which he is ideally suited by reason of his background and experience."

At 59, Werly is the oldest man on the top marketing staff.

Another office that deserves considerable attention is the analysis and controls department.

One reason is that this department will carry through the company's heightened emphasis on "dollars-and-cents" measurement of performance. Here will be where all the long-range planning and studying are reduced to financial terms.

It will be where the "numbers" skills are applied to creative skills to insure that Mobil will make a profit through the strategy it adopts.

Another reason why this department deserves watching is the man who has just taken over its leadership. He's J. B. Merrell, who, at 36, is the youngest man on the Mobil staff.

Merrell has already demonstrated the effect he can have on the company. As administrative assistant to Bellman (a function he retains with his promotion), many of Merrell's ideas were worked into the new staff reorganization.

He thus takes a position on a staff he helped create.

The general operations department will continue to direct and provide functional planning for operations throughout Mobil's marketing area.

In addition it will provide specialized services that fall outside of market development, such as product quality evaluation and control.

The dealer and distributor relations department continues unchanged.

Survey Makes Women Look Dull

Oil marketers shouldn't have much trouble satisfying women drivers: just cater to their husbands, a new survey shows.

Fully 56% of the women drivers interviewed by Ethyl Corp. said they don't have any say whatsoever in where their cars are serviced—even when there are two cars in the family.

Of course, 98% of this group is married, and, presumably, most of them dutifully follow their husband's recommendations.

Another 30% of the women drivers surveyed may be able to pick out a particular station or brand—but not both. Nine out of ten of these women are married.

There is, however, a strong core of independent females that actually make most of the important decisions about servicing their cars.

These women more than likely work for a living and do a lot of driving. A high proportion of them (39%) is unmarried. But even where there is a man around the house, these women decide on the brand of gasoline to put into the family car and which station to patronize.

Ethyl calls these women "primary decision makers." They represent 14% of the 979 women Ethyl was able to categorize.

Despite their scarcity, these women seem worth courting. Not only do they drive more than most women, but every one of them is loyal to the dealer who treats them well, and they all buy one brand consistently.

Aside from a higher sense of loyalty to brand and station, however, the decision-making female motorist doesn't differ very much from other women in the way she thinks about gasoline and grease.

In choosing a neighborhood station, she is influenced most by location, the personnel at the station, and the type of service she gets. It may be true that she gives more thought to these factors than other women, but by and large the ranking of factors which influence her decision is the same.

This is true, too, for highway station selections. Most women, whether they make all of the servicing decisions, a few, or none at all, look for clean restrooms, wide driveways, and a well-kept appearance.

What's New / IN MARKETING

The diesel taxi cab is literally stalling itself out of the West Coast market.

The steep hills of San Francisco—and a tight fit for passengers—has sealed its doom, at least as far as Yellow Cab Co. of California is concerned.

"They're great on fuel economy, but they are underpowered for hills, and should be larger," says W. Lansing Rothschild, president.

In 1959, he imported about 100 Mercedes 190-D's from Germany in what seemed to be a national trend (PW—Jun.19'59,p92).

But now Rothschild is shuttling all his diesels to Los Angeles and will replace them eventually with conventional cabs.

•

A nationwide oil marketer may soon follow DX Sunray Oil Co. (PW—Dec.16'60,p40) in opening a circular service station. Plans for the station are completed. All that's needed is the go-ahead from top management.

The two-bay station is not quite round. Actually it's a set of three hexagons honeycombed together. Add a fourth hexagon and you have another service bay.

Designers at the company are fond of the station because of this flexibility and because the station really has no back. It's ideal for supermarket locations, for example, where the traffic comes from all directions.

•

Domestic oil burners were installed in 516,863 homes last year, pushing the number of centrally oil heated homes to a record 9,824,590, the National Fueloil Council reported last week.

The increase did represent, however, a 19% drop in the rate of installations when compared to 1959. This was attributed to the year's poor business conditions, however, and the fall-off in home building.

Gas heat installations were down 11% under their 1959 rate.

JAY S. HANDLEY has been elected vice-president in charge of drilling, production, and production engineering for Texas Gas Exploration Corp., Houston. He was formerly superintendent of the company's drilling and production department. Handley joined Texas Gas Exploration in 1956, following association with its parent, Texas Gas Transmission Corp.

H. B. Noyes

J. S. Handley

HOWARD B. NOYES has been elected vice-president for gas procurement of Columbia Gas System Service Corp., with offices in Houston. He succeeds **Irving K. Peck**, who has retired. In his new position, Noyes will be in charge of Columbia's program for securing new natural gas reserves in the Southwest to meet demands of the Columbia System operating companies in a seven-state area. Noyes came to the Columbia System in 1958 from Washington Gas Light Co., Washington, D.C., where he had been senior vice-president.

CARROL M. BENNETT has been named president of Frankfort Oil Co., Dallas, division of Joseph E. Seagram & Sons, Inc. He has supervised the operations for Frankfort since 1956, when his management consultant firm was retained by the oil company. He will devote full time to his new position.

ROBERT F. UPSON has been named district sales manager of Shell Oil Co.'s Portland (Ore.) district. He succeeds **R. W. Reynolds**, who has been transferred to the Cleveland division as sales manager. Upson, who joined Shell at Portland in 1935, was most recently district sales manager, Phoenix district, Los Angeles division.

ROBERT A. PRUSINSKI has been named manager of operations for Trans-Arabian Pipe Line Co., in Beirut, Lebanon, succeeding **Dallas T. Pinckney**, who has retired from Tapline. Pinckney, who has spent over 20 years in the Middle East, where he helped to build much of Arabian American Oil Co. and Tapline, will settle in Berkeley, Calif., as a consultant. Prusinski was formerly general superintendent in Saudi Arabia for Tapline. **George F. Heide**, assistant general superintendent in Saudi Arabia, becomes general superintendent. **David S. Dodge**, assistant manager, government relations, in Beirut, becomes manager, government relations, a position that has been open since **William A. Campbell** became vice-president, government relations, a few years ago. **John O'Hagan** becomes assistant manager, industrial relations, and **Willard C. Ewing** has transferred from Aramco to Tapline as supervisor, travel and air transport, succeeding **Howard C. Wells**, who is retiring. Ewing will also be pilot of Tapline's Beirut-based DC-3.

JAMES F. BELL has been appointed associate manager of new projects for the domestic department of Mobil Chemical Co., New York, operating division of Socony Mobil Oil Co. Bell joined the Mobil organization in 1959, and organized the petroleum chemical department for General Petroleum Corp., former West Coast affiliate of Mobil. After the merger of General Petroleum into Mobil Oil Co., he was named manager of western operations of Socony Mobil's petroleum chemicals department. Before 1959, Bell was executive vice-president and a director of Northwest Natural Gas Co., Portland, Ore.

J. F. Bell

W. D. Hamm

W. DOW HAMM has been elected a director of Atlantic Refining Co., Philadelphia, succeeding **L. A. Sunkel**, who is retiring. Hamm was named vice-president and general manager of Atlantic's crude oil production department last year, and before that he was manager of its domestic and foreign exploration.

FRANK A. MOORE, assistant to the president of Marathon Pipeline Co., subsidiary of Ohio Oil Co., Findlay, Ohio, transfers to its Rocky Mountain region at Casper, Wyo., as acting assistant manager. Moore succeeds **M. E. Parker**, who is on loan to Oasis Oil Co. of Libya, Inc., joint subsidiary of Ohio Oil, Continental Oil Co., and Amerada Petroleum Corp. **R. L. Linville**, supervisor of the Casper regional pipeline engineering department, has moved to Findlay as supervisor of Marathon's engineering department. **Richard Englum**, a pipeline engineer at Casper, succeeds Linville there.

E. E. FICKINGER, division geophysicist at Midland, Tex., for Continental Oil Co., is president of the Permian Basin Geophysical Society for 1961. Other 1961 officers, all from Midland, are: **J. J. Ekstrom**, TXL Oil Corp., first vice-president; **M. R. Hewitt**, Pan American Petroleum Corp., second vice-president; **N. D. Nunnally**, Seismic Explorations, Inc., treasurer; and **G. E. Parker**, Empire Geophysical, Inc., secretary.

C. H. PLOMTEAUX, JR., is the new manager of Shell Chemical Co.'s Shell Point ammonia plant, near Pittsburg, Calif. He replaces **F. G. Watson**, who has transferred to Shell's New York office as manager of manufacturing in the plastics and resins division. Plomteaux, who has been with the company since 1940, was most recently superintendent of Shell's Houston plant.

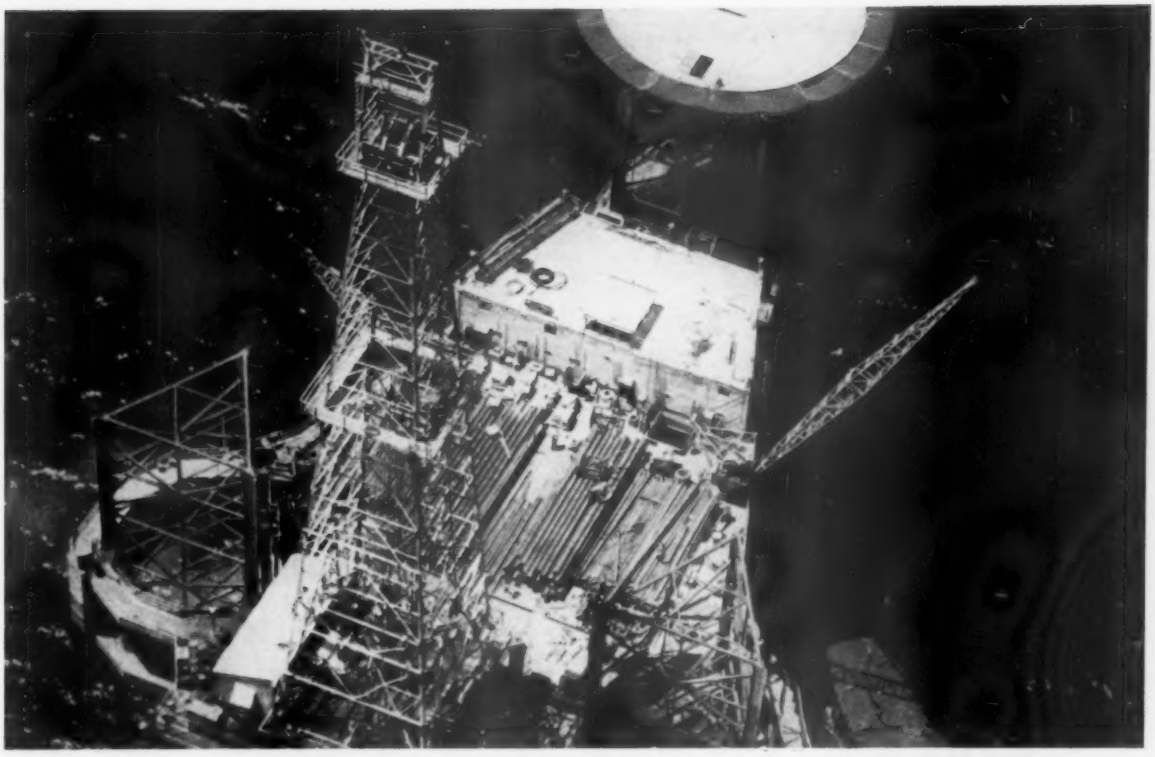
G. A. Klaffky

C. H. Plomteaux, Jr.

G. ALBERT KLAFFKY is manager of a new group in Mobil Oil Co.'s recently modified headquarters marketing department, in New York, called market development (page 54). At the same time, the headquarters position of general manager has been eliminated. **Glenn L. Werly**, who has been general manager of marketing since 1958, will become special assistant to the vice-president for marketing, **Vernon A. Bellman**. The market development unit, under Klaffky, will be the problem-solving arm of marketing, concerned with determining appropriate methods for marketing in the future. Klaffky was most recently resale programs manager in New York, and before that was sales manager of the Twin Cities division, with offices in Minneapolis. At the same time, **Parker B. Smith** was named manager of the newly formed national accounts unit, which consolidates the national accounts and railroad units. Responsibility for sales direction of process products has been transferred from Mobil Chemical Co. to Mobil Oil's commercial marketing department. **T. J. Evans** has been named manager of process products. Retail merchandising, a large part of the former resale programs group, has been made the responsibility of the resale marketing department. **B. W. Hurst** is the new retail merchandising manager.

DANIEL M. BAILEY is the new executive vice-president of Southern Union Gas Co., Dallas. He was formerly vice-president and general counsel for Continental Emsco Co., also in Dallas.

W. H. FOWLER has been promoted to sales manager of Pure Oil Co.'s wholesale marketing division, at Palatine, Ill. Fowler, who joined Pure in 1941, has been assistant sales manager of the wholesale marketing division since 1959.



Offshore operations special report February 17th

Offshore drilling is making news in Louisiana these days. In contrast to recent years, offshore is bustling. As always, the industry is seeking better and cheaper ways to operate offshore. For one thing, deep water drilling still poses problems — and that's where some of the newer leases are located.

The February 17th issue of Petroleum Week will have a special report on the oil industry's booming offshore operations. For advertisers selling services, supplies and equipment that can help oilmen solve their offshore problems, this issue will be especially important. It's the right setting and the right time to let your customers know what you can do for them.

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EDWIN M. HUBACH is Williams Bros. Co.'s new vice-president in charge of domestic and Canadian construction operations, and **P. D. Campbell** has been named vice-president responsible for its operations in Europe, Africa, and the Middle and Far East. Hubach, formerly in charge of the company's operations in Venezuela, will be located in Tulsa. Campbell, who joined Williams Bros. in 1948, has worked on and supervised many of the company's construction projects in Venezuela, Colombia, Bolivia, Chile, Canada, Indonesia, Iran, Turkey, and Austria. In his new position, Campbell will be located in London.

J. A. Emery

E. M. Hubach

JOHN A. EMERY has been appointed assistant sales manager, merchandising products, for the National Supply Division of Armco Steel Corp., in Pittsburgh. Emery started with National Supply at its Hobbs, (N. M.) store in 1936, and later worked in stores at Denver City, McCamey, and Wichita Falls, Tex., and served in the tubular sales office at Corpus Christi. He was appointed district manager at Corpus Christi in 1945, and at Lafayette, La., in 1948. Since 1951 he has served as division sales manager of the Gulf Coast division, with headquarters in Houston.

JOHN D. CRADDOCK is the new manager of Continental-Emsco Co.'s Longview (Tex.) branch store. Craddock, with C-E since 1948, was most recently district production machinery specialist at Tyler, Tex.

JOHN KNODLE has joined the engineering department of C-B/Southern, Houston, a division of Cooper-Bessemer Corp. He recently returned from Venezuela, where he was a natural gas project engineer for Mobil de Venezuela, responsible for the design of gas lift, gas gathering, and gas injection plants. C-B/Southern is a manufacturer of packaged compressor plants for gas lift, gas gathering, and gas injection systems.

EDWARD E. LYNN has joined Youngstown Sheet & Tube Co., in Youngstown, Ohio, as assistant general counsel. He was formerly vice-president and chief legal officer for Fairbanks, Morse & Co., Chicago.

GEORGE MEYER has been named vice-president, manufacturing, for Packer Seal Co., a division of Parker-Hannifin Corp. Meyer, who has been manager of manufacturing at the company's headquarters in Culver City, Calif., will move his offices to Berea, Ky. Meyer is responsible for all Parker Seal's manufacturing facilities, in Culver City and East Los Angeles, Calif., and Berea and Lexington, Ky.

JACK A. HARRISON moves up to general sales manager of Hill Hubbell Co., factory applicators of pipe coatings and wrappings. Harrison, who joined the company in 1954, was most recently district sales manager in the Southeast. **Howard Trusler** has joined the company as district sales manager for Ohio, West Virginia, Kentucky, and parts of Pennsylvania. He was formerly regional sales manager in Houston for Pittsburgh Coke & Chemical Co. **M. M. Bowen, Jr.**, who has been with the company since 1956, was appointed district sales manager covering North and South Dakota, Nebraska, Kansas, Iowa, Missouri, and Minnesota.

RUSSELL W. APOLANT and **JAMES J. O'CONNOR** have been appointed assistant secretaries of The Lummus Co., New York. Apolant will also continue as manager of contract administration, and O'Connor as assistant counsel.

GEORGE A. HALSEY, formerly assistant to the vice-president of sales for OPW Corp., Cincinnati, is now its manager of customer service. He will be responsible for prompt handling of customer requirements at the Cincinnati sales office, and will continue to supervise the company's sales order department.

BUDDY L. MITCHELL moves up to general sales representative for Arkansas, Louisiana, Texas, and Oklahoma, for Rig Time, Inc., Shreveport, La. Mitchell was formerly a unit supervisor there.

D. T. Bixby

M. B. Sennet

DONALD T. BIXBY has been appointed manager of the IMO pump department in the power auxiliaries division of De Laval Steam Turbine Co., Trenton, N. J., and **M. B. SENNET** has been appointed assistant to the vice-president of the division. Sennet was formerly manager of the standard products division, and Bixby has been assistant manager. At the beginning of this year, a machinery division and the power auxiliaries division replaced several former product groups, including the standard products division.

C. W. McComas

W. Robertson

C. W. McCOMAS has been named packer sales coordinator for Otis Engineering Corp., with offices in Dallas, and **WALLACE ROBERTSON** has been named gas lift manager at Dallas. McComas will be in charge of the company's expanding packer and bridge plug line, and Robertson will be responsible for its lift sales division. McComas formerly supervised sales and field engineering for Otis packers and bridge plugs in the Oklahoma-Kansas area, and Robertson has been a gas lift specialist in the Texas-Gulf Coast area.

W. B. DOWNES will handle executive customer relations for the stainless steel division of Crucible Steel Co. of America, Pittsburgh. In his newly created position, he will devote his time to customer service, covering stainless steels and high temperature alloys. Downes, who joined Crucible in 1934, has been with the stainless sales division since 1935.

TOM H. FRASER, formerly manager of the production equipment department at Continental-Emsco Co.'s headquarters in Dallas, is now its sales promotion manager there. Fraser joined the company in 1934, and served as sales engineer, machinery representative, district machinery representative, assistant district manager, and district manager, before moving to the production equipment department in 1955. In his new position, Fraser will be in charge of sales promotion activities for all C-E operations.

T. H. Fraser

J. A. Boatman

JOHN A. BOATMAN is the new general manager of M-B Engine Co., exclusive distributor of Mercedes-Benz oilfield, marine, and industrial diesel engines and generator sets, in Louisiana and Mississippi. For the past eight years, Boatman has been engaged in the sales of diesel engines and allied oilfield equipment in the South Louisiana area.

J. E. GILES will direct the new north-central division of the W. C. Norris Division of Dover Corp., which is responsible for sales activities in Illinois, Indiana, Kansas, Kentucky, Michigan, Ohio, and Oklahoma. The new division replaces the Oklahoma sales division, formerly headed by Giles, which was responsible only for sales in Oklahoma and Kansas.

BURTON M. JOSEPH has joined Young Radiator Co., Racine, Wis., as sales manager of the industrial and oil field division. He was formerly general sales manager of Solar Chicago, a division of U.S. Industries, Inc. He has also been a sales engineer for Griscom-Russell Co., Massillon, Ohio, and district sales manager for Yuba Industries, Inc., San Francisco.

B. M. Joseph

H. Cutler

HARMON CUTLER has been promoted to the newly created position of plant manager for Cal-Metal Pipe Corp. of Louisiana, at Baton Rouge. Cutler, who has been associated with Cal-Metal since 1955, was most recently superintendent of the plant there.

KEMP BARLEY is district manager for a new sales and service office opened in Corpus Christi by Oil Base, Inc., manufacturer of Black Magic oil base drilling fluid. Barley will be responsible for sales in the lower part of the Texas Gulf Coast and in South Texas. A storage and distribution terminal has been established at Alice, Tex., to serve this area.

PETER T. BLINCO has been named special sales representative at Midland, Tex., for Tuboscope Co. Blinco, who recently opened Tuboscope's new sales office in Midland, will be responsible for all sales in that area. He joined Tuboscope last year as a salesman at the company's Houston headquarters.

E. N. WRENSHALL has been elected vice-president of Kerotest Mfg. Co., Pittsburgh. Wrenshall, who joined the company in 1946 as director of purchases, was appointed general manager in 1958.

C. L. FROST has been appointed manager of distributor sales for Hewitt-Robins, Inc., Stamford, Conn. Frost was formerly a regional sales manager for the company, and before that was its advertising manager. In the past year, he has specialized in the promotion of sales of Hewitt-Robins rubber products to the petroleum industry.

JOHN E. YOCOM has joined Arthur D. Little, Inc., as a senior staff member with the western division laboratories, in San Francisco. He was formerly director of technical services of the Bay Area Air Pollution Control District. In his new position, Yocom will work with **Dr. Herbert Bandes,** research and development director of the western division, on process modification research and air pollution controls for industry.

ROBERT A. TRUMPIS has been elected vice-president in charge of manufacturing for Minneapolis-Moline Co., Hopkins, Minn. Trumpis came to Minneapolis-Moline recently from the Norair Division, Northrop Corp., Los Angeles, where he had been executive assistant to the vice-president of manufacturing. In his new position, Trumpis will be responsible for all manufacturing operations of the parent company, as well as its divisions and subsidiaries in the United States, Canada, and abroad.

BECKMAN INSTRUMENTS, INC., Fullerton, Calif., has retained Erwin Wasey, Ruthrauff & Ryan, Inc., as its advertising agency. The agency will serve the parent company, its domestic divisions, and overseas operations. Beckman Instruments manufactures electronic components, instruments, and systems for industrial, scientific, and military use.

CONTINENTAL-EMSCO CO., Dallas, will distribute Oil & Gas Supply Co.'s packaged Joy gas compressor units in the United States. Oil & Gas Supply Co. is located in Houston.

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Are the Antitrusters At It Again?

BUSINESS IN GENERAL, and oil in particular, may be in for another siege of antitrust nightmares in the not-too-distant future. And from a direction heretofore considered safe and sound.

Hearsay and speculation in Washington have it that the Justice Dept. and the Federal Trade Commission are taking long, hard looks at several diversification mergers. These are the avenues many business firms have been taking recently to hedge against recessions and slack periods in their own lines, and to improve corporate cash flows and profit potentials.

The mergers under scrutiny, which the legal beagles are said to be sniffing with the thought that they might represent illegal economic concentrations, aren't petroleum affairs. But oil would have a big stake in any test case, for petroleum interests have been diversifying widely in recent years—from real estate and housing developments to grocery lines and missile components.

THE INVESTIGATORY IDEA, it seems to us, is way out in left field. But Justice Dept. lawyers haven't been hesitant to go to court in the past with some mighty thin cases and some far-fetched thinking. The so-called Tulsa conspiracy trial could be cited as a specific example of this "let's have a go at it anyhow" brand of thinking.

The Kennedy Administration, which takes over in Washington this very day, can't be blamed for hatching the idea, because it has been germinating in the antitrust division for months. It will have to shoulder the blame though if such a case does come to court, for authority and responsibility now rests in its hands.

ANOTHER ANTITRUST ADVENTURE whose tangents may touch oil later is the government suit against three chemical companies in Wilmington, Del. This is another antitrust "first," and invokes the Clayton Act to challenge what the Justice Dept. says is the "increasingly popular joint-venture technique under which competing companies may combine to avoid, retain, or lessen competition."

Much depends upon the way these words are interpreted. Looking down the road, for example, it is inconceivable to think—if the government wins—that this philosophy might be applied to oil combines that are formed to finance exploration or development programs which none of the companies could afford to carry out individually?

It will be a shame if these things come to pass. They can only stifle economic progress and prosperity, instead of enhancing them.

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